



BRISTOL BAY SALMON (Oncorhynchus spp.) - 1979

A Compilation of Catch, Escapement, and Biological Data

By:
Henry J. Yuen
and
Charles P. Meacham

August 1983

ADF&G TECHNICAL DATA REPORTS

This series of reports is designed to facilitate prompt reporting of data from studies conducted by the Alaska Department of Fish and Game, especially studies which may be of direct and immediate interest to scientists of other agencies.

The primary purpose of these reports is presentation of data. Description of programs and data collection methods is included only to the extent required for interpretation of the data. Analysis is generally limited to that necessary for clarification of data collection methods and interpretation of the basic data. No attempt is made in these reports to present analysis of the data relative to its ultimate or intended use.

Data presented in these reports is intended to be final, however, some revisions may occasionally be necessary. Minor revisions will be made via errata sheets. Major revisions will be made in the form of revised reports.

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Compiled and Edited by:

Henry J. Yuen

and

Charles P. Meacham

Alaska Department of Fish and Game
Division of Commercial Fisheries
Anchorage, Alaska

August 1983

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ABSTRACT

Numbers of Bristol Bay salmon that were either caught in the fishing districts or counted as escapement in the rivers are presented for 1979. Sex and age composition, mean lengths and weights, standard errors, and sample sizes plus catches allocated to river of origin are presented in tabular form. Emergency order periods and related catches are also discussed.

INTRODUCTION

This publication is the seventeenth in a series of annual catch and escapement statistics for the Bristol Bay sockeye salmon (*Oncorhynchus nerka*) fishery, the second for chinook (*O. tshawytscha*) and chum salmon (*O. keta*) and the first for coho salmon (*O. kisutch*).

Personnel from the Alaska Department of Fish and Game (ADF&G), Division of Commercial Fisheries, collected the data and aged the scales for both the catch and escapement of sockeye, chinook, and chum salmon while personnel from the Fisheries Research Institute, University of Washington, collected data and aged the scales from the coho catch in the Nushagak and Togiak districts. Final harvest data were compiled from fish tickets by the Computer Services Section of the Division of Commercial Fisheries.

METHODS AND MATERIALS

Much of the data used in this report were collected by tower crews at escapement counting towers and catch samplers at selected canneries throughout Bristol Bay. Figure 1 shows the approximate location of these projects.

Salmon escapement enumeration crews collected samples daily using beach seines. Commercial catch samplers collected samples whenever the various districts were open to commercial fishing. Samplers obtained fish as they were unloaded from tenders and tried to spread their samples as uniformly as possible among the delivering tenders. Samples sizes for both catch and escapement were based on statistical analysis of past sampling efforts which indicated that for sockeye and chinook salmon a 600-fish sample per sample period and for pink and chum salmon a 400-fish sample per sample period was required for the estimation of age and sex composition.

Sockeye escapements were counted from towers constructed on the banks of the Kvichak, Naknek, Egegik, Ugashik, Wood, Igushik, Nuyakuk, Snake, and Togiak rivers. Salmon were counted for 10 minutes on each bank of the river every hour. These 10 minute counts were then expanded to estimate hourly escapements which were accumulated to determine the daily escapement. Sockeye escapement in the Snake River was counted through a weir constructed just below the lake outlet. Sockeye escapements in the Branch River, the Nushagak-Mulchatna rivers plus several Togiak District systems as well as chinook and chum salmon escapements in the Nushagak and Togiak districts were estimated through aerial surveys.

Sockeye caught in the Naknek-Kvichak and Nushagak districts were from mixed river stocks and therefore had to be allocated to the various contributing river systems to determine each river's total return. Each age class was apportioned independently by applying the relative proportion of the escapement of that age class from the contributing river in question to the commercial catch of that age class.

The two-digit age designation used in this report is the Gilbert/Rich method of

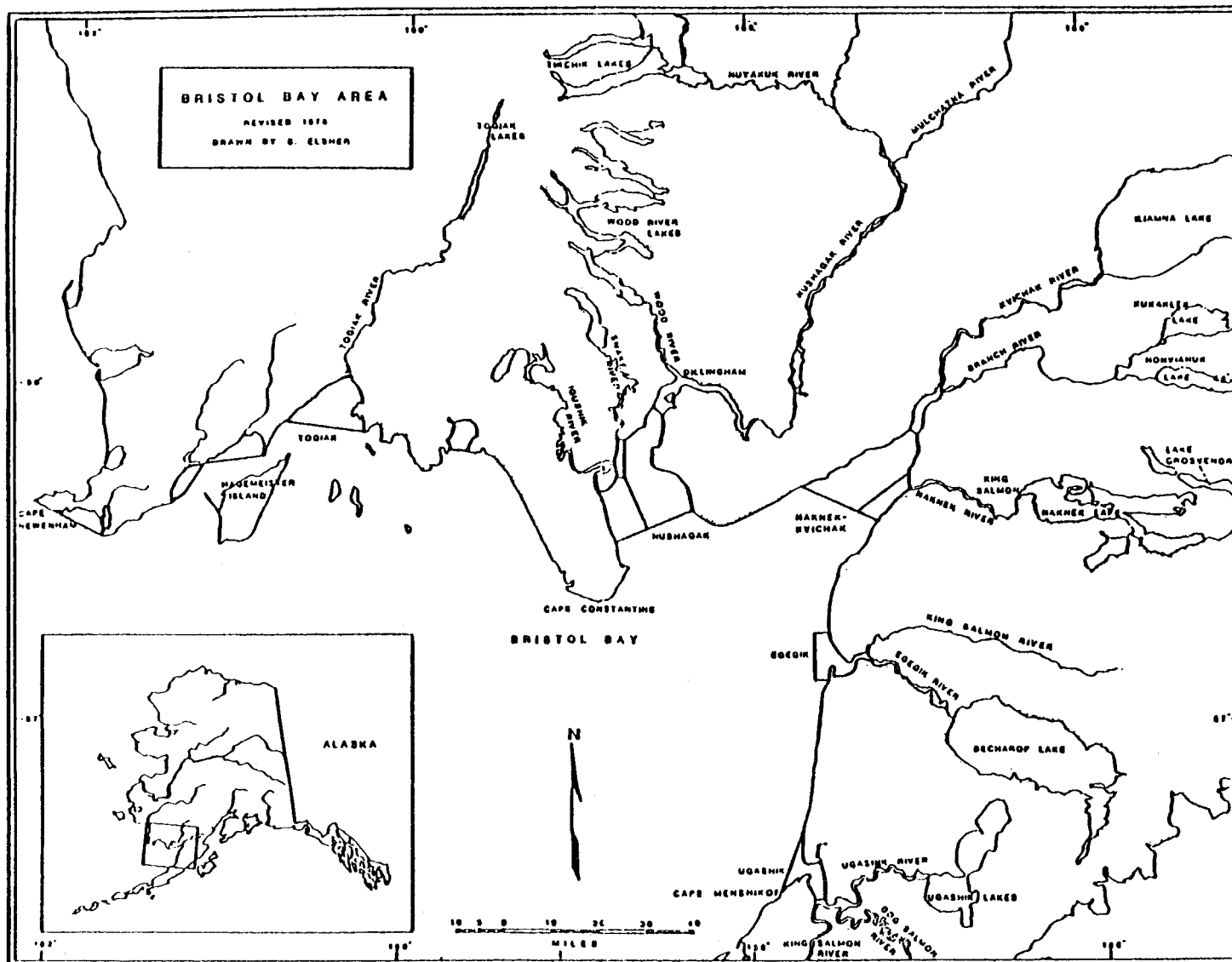


Figure 1. Bristol Bay area map.

representing salmon ages or a derivative thereof. The first digit represents the total age of the fish while the second digit represents the number of years of fresh water residence. Thus a 5_3 fish (5 subscript 3 in the test or 53 in the tables) is 5 years old, having migrated to the ocean after spending 1 year in the stream, 2 years in the lake and 2 years in the ocean. Similarly, a 5_2 fish is one that is 5 years old and spent 1 year in the stream, 1 year in the lake, and 3 years in the ocean.

Length measurements were from mid-eye to fork of tail and weights were round weights.

RESULTS

Summary data for all Bristol Bay sockeye salmon are found in Tables 1 through 6. The harvest of 21.4 million sockeye salmon from the five major fishing districts dominated the catch. The inshore run of sockeye salmon to Bristol Bay totaling 39.8 million fish was the largest non-peak run since 1938. Sockeye escapement goals were achieved for the sixth consecutive year in all systems including the Ugashik River which has had limited commercial fishing during recent years.

Management efforts in the salmon fishery emphasized the achievement of sockeye salmon escapement goals in all systems while allowing the harvest of those fish excess to escapement requirements. In the Nushagak District where a large run of chinook salmon occurs, early season management strategies also require adjustments in fishing time whenever necessary to achieve adequate escapements of this species.

Above-average harvests were also realized for the other species of salmon and were highlighted by record or near record catches of 212,873 chinook and 294,399 coho salmon. A total of 906,797 chum and 3,849 pink salmon were also caught. The bay-wide salmon catch, all species combined, during the 1979 season totaled 22.8 million fish or 26% of the entire statewide harvest.

The Japanese high seas mothership fishery harvest of Bristol Bay salmon continues to decline. The renegotiation of the International North Pacific Fisheries Commission treaty, which first went into effect for the 1978 fishing season, continues to restrict by area and time the movements and fishing patterns of the Japanese land-based and mothership fleet. This curtailment has markedly reduced high seas interceptions of Bristol Bay sockeye salmon. In 1979 the Japanese high seas mothership fleet caught only 68,000 mature sockeye of Bristol Bay origin. The catch of immature Bristol Bay sockeye in the spring of 1978 amounted to 236,000 or 304,000 immature and mature fish combined, less than 1% of the total Bay sockeye run. This level of interception is well below the 20 year average of 10% or 1.9 million fish.

Commercial fishing effort in Bristol Bay was similar to recent high years, with 2,735 units of gear and 2,335 vessels registered to fish. Of the total licensed gear units, it is estimated that only 2,328 units, or 85% of those licensed, actually participated in the fishery.

Table 1. Bristol Bay sockeye salmon inshore return, by river system, 1979.

System	Catch	Escapement	Total Return
Kvichak River	13,418,829	11,218,434	24,637,263
Branch River	278,934	294,200	573,134
Naknek River	1,294,063	925,362	2,219,425
Subtotal Naknek-Kvichak District	14,991,826	12,437,996	27,429,822
Egegik River	2,257,332	1,032,042	3,289,374
Ugashik River	391,118	1,700,904	2,092,022
Wood River	1,837,191	1,706,352	3,543,543
Igushik River	954,489	859,560	1,814,049
Nuyakuk River	382,512	360,120	742,632
Snake River	9,219	8,439	17,658
Nushagak-Mulchatna River	143,935	138,300	282,235
Subtotal Nushagak-Igushik District	3,327,346	3,072,771	6,400,117
Togiak	460,984	171,138	632,122
Total Bay	21,428,606	18,414,851	39,843,457

Table 2. Bristol Bay sockeye salmon inshore return by ocean age group and river system, 1979.

System	Ocean Age Group				Total
	1	2	3	4	
KVICHAK					
Number	284,417	21,906,382	2,443,102	3,362	24,637,263
Percent	1.15	88.92	9.92	.01	61.84
BRANCH					
Number	25,889	527,776	19,469	---	573,134
Percent	4.52	92.08	3.40	---	1.44
NAKNEK					
Number	15,987	1,505,361	697,330	747	2,219,425
Percent	.72	67.83	31.42	.03	5.57
SUB-TOTAL NAKNEK-KVICHAK					
Number	326,293	23,939,519	3,159,901	4,109	27,429,822
Percent	1.19	87.28	11.52	.01	68.85
EGEGIK					
Number	9,135	2,346,414	933,740	355	3,289,374
Percent	.28	71.33	28.38	.01	8.26
UGASHIK					
Number	4,419	2,027,569	60,034	---	2,092,022
Percent	.21	96.92	2.87	---	5.25
WOOD					
Number	---	1,946,564	1,596,979	---	3,543,543
Percent	---	54.93	45.07	---	8.89
IGUSHIK					
Number	---	1,084,952	729,097	---	1,814,049
Percent	---	59.81	40.19	---	4.55
NUYAKUK					
Number	481	509,684	232,467	---	742,632
Percent	.07	68.63	31.30	---	1.86
SNAKE					
Number	---	10,641	7,017	---	17,658
Percent	---	60.26	39.74	---	.04
NUSHAGAK-MULCHATNA					
Number	41	44,745	228,527	8,922	282,235
Percent	.02	15.85	80.97	3.16	.71
SUB-TOTAL NUSHAGAK-IGUSHIK					
Number	522	3,596,586	2,794,087	8,922	6,400,117
Percent	.01	56.19	43.66	.14	16.05
TOGIAK					
Number	---	287,381	343,931	810	632,122
Percent	---	45.46	54.41	.13	1.59
TOTAL BAY					
Number	340,369	32,197,469	7,291,423	14,196	39,843,457
Percent	.85	80.81	18.30	.04	100.00

Table 3. Bristol Bay sockeye salmon inshore return by age group and river system, 1979.

RIVER SYSTEM	AGE GROUP													
	31	32	41	42	43	51	52	53	62	63	64	73	74	84
KVICHAK	--	1,868	--	5,501,228	282,549	--	1,925,969	16,374,976	3,362	517,133	30,178	--	--	--
BRANCH	--	25,889	--	402,556	--	--	17,277	125,220	--	2,192	--	--	--	--
NAKNEK	--	4,482	--	448,650	11,505	--	191,978	1,056,711	--	504,605	--	747	747	--
SUB-TOTAL NAKNEK-KVICHAK	--	32,239	--	6,352,434	294,054	--	2,135,224	17,556,907	3,362	1,023,930	30,178	747	747	--
EGEGIK	1,012	506	--	143,715	8,629	--	96,009	2,165,983	--	819,549	35,704	--	17,912	355
UGASHIK	--	--	--	1,427,988	4,419	--	13,985	594,955	--	43,019	4,626	--	3,030	--
WOOD	--	--	--	1,538,053	--	--	1,567,177	408,144	--	29,802	367	--	--	--
IGUSHIK	--	--	--	753,414	--	--	703,924	331,538	--	25,173	--	--	--	--
NUYAKUK	--	481	--	502,991	--	--	231,356	6,693	--	1,111	--	--	--	--
SNAKE	--	--	--	10,018	--	--	6,623	623	--	394	--	--	--	--
NUSHAGAK-MULCHATNA	3,068	41	28,774	30,893	--	--	171,643	10,784	8,922	28,110	--	--	--	--
SUB-TOTAL NUSHAGAK-IGUSHIK	3,068	522	28,774	2,835,369	--	--	2,680,723	757,782	8,922	84,590	367	--	--	--
TOGIAK	467	--	4,233	263,129	--	110	325,116	23,785	700	14,582	--	--	--	--
TOTAL BAY	4,547	33,267	33,007	11,022,635	307,102	110	5,251,057	21,099,412	12,984	1,985,670	70,875	747	21,689	355

Table 4. Bristol Bay sockeye salmon inshore return (percent) by age group and river system, 1979.

RIVER SYSTEM	AGE GROUP														TOTAL
	31	32	41	42	43	51	52	53	62	63	64	73	74	84	
KVICHAK	--	.01	--	22.33	1.15	--	7.82	66.46	.01	2.10	.12	--	--	--	61.84
BRANCH	--	4.52	--	70.24	--	--	3.01	21.85	--	.38	--	--	--	--	1.44
NAKNEK	--	.20	--	20.22	.52	--	8.65	47.61	--	22.74	--	.03	.03	--	5.57
SUB-TOTAL NAKNEK-KVICHAK	--	.12	--	23.16	1.07	--	7.79	64.01	.01	3.73	.11	--	--	--	68.85
EGEGIK	.03	.02	--	4.37	.26	--	2.92	65.85	--	24.91	1.09	--	.54	.01	8.26
UGASHIK	--	--	--	68.26	.21	--	.67	28.44	--	2.06	.22	--	.14	--	5.25
WOOD	--	--	--	43.40	--	--	44.23	11.52	--	.84	.01	--	--	--	8.89
IGUSHIK	--	--	--	41.53	--	--	38.80	18.28	--	1.39	--	--	--	--	4.55
NUYAKUK	--	.07	--	67.73	--	--	31.15	.90	--	.15	--	--	--	--	1.86
SNAKE	--	--	--	56.73	--	--	37.51	3.53	--	2.23	--	--	--	--	.04
NUSHAGAK-MULCHATNA	1.09	.01	10.19	10.95	--	--	60.82	3.82	3.16	9.96	--	--	--	--	.71
SUB-TOTAL NUSHAGAK-IGUSHIK	.05	.01	.45	44.30	--	--	41.88	11.84	.14	1.32	.01	--	--	--	16.05
TOGIKAK	.07	--	.67	41.63	--	.02	51.43	3.76	.11	2.31	--	--	--	--	1.59
TOTAL BAY	.01	.08	.08	27.67	.77	--	13.18	52.96	.03	4.98	.18	--	.06	--	100.00

Table 5. Bristol Bay catch and escapement of sockeye salmon by age group and sex with length (mm) and weight (kg) 1979.

	AGE GROUP														
	31	32	41	42	43	51	52	53	62	63	64	73	74	84	TOTAL
MALES															
NUMBER	3051	31533	14042	5719419	304095	0	2392333	10111348	2174	860928	33853	0	10485	0	19156980
AV LENGTH	532.69	353.20	576.52	531.74	398.77		588.03	542.11	605.01	587.05	538.66		592.79		544.33
STD ERROR				1.24			1.56	2.20		6.41					.05
SAMP SIZE	5	6	14	4235	116	0	2551	3973	5	778	33	0	15	0	11731
AV WEIGHT	2.63		4.13	2.78			3.74	2.89	4.25	3.44	2.75		3.38		3.00
STD ERROR				.07			.06	.39	.11	.16					.00
SAMP SIZE	1	0	3	580	0	0	380	393	3	82	3	0	1	0	1446
FEMALES															
NUMBER	1496	1734	18965	5303216	3007	110	2858724	10988064	10810	1124742	37022	747	11204	355	20069112
AV LENGTH	534.00	407.66	557.51	516.91	485.56	537.00	563.49	534.67	577.06	477.09	546.10	611.00	580.99	591.00	530.96
STD ERROR				1.26			1.28	1.78		9.02					.04
SAMP SIZE	2	3	31	3747	3	1	2980	4266	9	990	34	1	15	1	12083
AV WEIGHT		1.60	3.02	2.49	1.21		3.19	2.51	3.33	2.97	2.49				2.64
STD ERROR			.30	.07			.03	.12	.16	.21					.00
SAMP SIZE	0	1	6	503	1	0	443	411	8	62	3	0	0	0	1438
SEXES COMBINED															
NUMBER	4547	33267	33007	11022635	307102	110	5251057	21099412	12984	1985670	70875	747	21689	355	39843457
AV LENGTH	533.06	366.07	564.28	524.61	399.62	537.00	574.61	538.24	578.00	524.72	542.54	611.00	586.69	591.00	537.49
STD ERROR				.89			1.02	1.39		5.65					.03
SAMP SIZE	7	9	45	7982	119	1	5531	8239	14	1768	67	1	30	1	23814
AV WEIGHT	2.63	1.60	3.30	2.64	1.21		3.44	2.70	3.35	3.16	2.62		3.38		2.82
STD ERROR			.20	.05			.03	.15	.11	.13					.00
SAMP SIZE	1	1	9	1083	1	0	823	804	11	144	6	0	1	0	2884

Table 6. Bristol Bay emergency order fishing periods by district, 1979.

Emergency Order Number		Date and Time				Hours Open
<u>SALMON</u>						
<u>NAKNEK-KVICHAK DISTRICT</u>						
	K 01	June 24	11	am - June 25	11 am	24
	K 02	June 25	11	am - June 25	11 pm	12
	K 03	June 25	11	pm - June 26	12 N	13
	K 05	June 26	12	N - June 27	1 pm	25
	K 06	June 27	1	pm - June 28	2 pm	25
	K 08	June 28	2	pm - July 17	9 am	18 days, 19 hrs ²
Naknek	Section only					
	K 11	July 1	2	am - July 2	3 am	25 ³
	K 13	July 2	3	am - July 2	3 pm	12
	K 14	July 2	3	pm - July 17	9 am	14 days, 18 hrs
<u>EGEGIK DISTRICT</u>						
	K 01	June 24	10	am - June 25	10 am	24
	K 04	June 26	12	N - June 26	12 MN	12
	K 07	June 28	1	am - June 28	1 pm	12
	K 09	June 29	1	pm - June 30	1 am	12
	K 10	June 30	1	am - June 30	1 pm	12
	K 12	July 2	3	am - July 2	3 pm	12
	K 14	July 2	3	pm - July 17	9 am	14 days, 18 hrs
<u>UGASHIK DISTRICT</u>						
	K 04	June 26	2	pm - June 27	2 am	12
	K 09	June 29	4	pm - June 30	4 am	12
	K 15	July 5	6	am - July 5	6 pm	12
	K 16	July 10	11:30	pm - July 11	11:30 pm	24
	K 17	July 11	11:30	pm - July 17	9 am	5 days, 9½ hrs
	K 18	July 21	9	am - July 23	9 am	48 ⁴
<u>NUSHAGAK DISTRICT</u>						
	D 04	June 15	9	am - June 16	9 am	24 ³
	D 05	June 19	6	am - June 20	6 am	24
	D 06	June 19	6	am - June 21	12 MN	54 ⁵
	D 07	June 21	9	am - June 21	9 pm	12
	D 08	June 23	11	am - June 23	11 pm	12
	D 09	June 25	1	pm - June 26	1 am	12
	D 11	June 27	3	am - June 27	3 pm	12
	D 12	June 27	3	pm - June 28	3 am	12
	D 13	June 28	3	am - June 29	3 am	24
	D 14	June 29	3	am - June 30	3 am	24
	D 16	July 1	6	am - July 1	6 pm	12
	D 17	July 1	6	pm - July 21	9 am	19 days, 15 hrs
Igushik	Section only					
	D 10	June 26	1	am - June 26	1 pm	12
	D 15	June 30	5	pm - July 1	5 pm	24
<u>TOGIAC DISTRICT</u>						
Togiak District only						
	D 18	July 20	9	am - July 21	9 pm	36
	D 19	July 27	9	am - July 28	9 pm	36

-Continued-

Table 6. Bristol Bay emergency order fishing periods by district, 1979 (continued).

<u>Commissioner's Announcements</u>		
<u>Number</u>	<u>Date</u>	<u>Description</u>
KS-1	July 1	Permitted a waiver of the 48-hour waiting period prior to relocation of set net gear in the Naknek-Kvichak District.
1-79	July 6	Granted a limited exception to 5 AAC 39.198 and permitted foreign processors to receive, process, and transport sockeye salmon from the Naknek-Kvichak, Egegik, and Nushagak districts under the conditions of a special waiver. It also designated constructive ports in these three Bays.
2-79	July 10	Amended Commissioner's Announcement No. 1-79 by deleting Nushagak Bay as a constructive port and terminated any possible foreign fish processing waivers for the Nushagak District.
3-79	July 11	Amended Commissioner's Announcement No. 1-79 by deleting Kvichak Bay and Egegik Bay as constructive ports and terminated any foreign fish processing waivers for the Naknek-Kvichak and Egegik districts.

<u>General Announcements</u>		
<u>Number</u>	<u>Date</u>	<u>Description</u>
1	July 6	<p>This is Steve Pennoyer, Acting Director of the Commercial Fisheries Division of the Alaska Department of Fish and Game with an announcement affecting the Bristol Bay salmon fishery. There is currently a Board of Fisheries regulation, 5 ACC 39.198 which governs certain activities by aliens not lawfully admitted to the United States. Among other things, this regulation prohibits foreign vessels or aliens, or both from processing fish resources. The regulation also specifies that the Commissioner can grant a limited exception to this regulation to allow foreign vessels to process fish resources in places by him if certain conditions exist.</p> <p>In regards to the Bristol Bay fishery, the Commissioner has determined that the run is apparently exceeding pre-season forecast levels and harvest rates are holding up longer than anticipated. The Department is now estimating that some 24 million sockeye have entered Bristol Bay compared to a pre-season forecast of 22.6 million. The run is still continuing.</p> <p>In the Nushagak, Naknek-Kvichak, and Egegik districts of the Bristol Bay area the sockeye salmon escapement requirements have now been met or exceeded in many of the contributing systems. Escapements satisfy subsistence needs of the area and all sockeye salmon in or entering the commercial fishery are now available for commercial harvest. It is anticipated that additional areas will be open to commercial fishing as required escapements are obtained. The volume of fish available for harvest has exceeded the processing capacity of facilities operated by United States processors causing numerous and lengthy suspensions of operation, imposition</p>

-Continued-

Table 6. Bristol Bay emergency order fishing periods by district, 1979 (continued).

General Announcements		Description
Number	Date	
		<p>of fishing limits and resultant loss of harvest opportunity to domestic fishermen. There is no opportunity for United States processors to make emergency arrangements to handle the total excess volume available. There is a likelihood of substantial wastage of fish resources to the fishery if foreign processing or transportation capacity is not utilized. There is no significant likelihood of clandestine foreign fishing operations if the exception is granted.</p> <p>Therefore, effective immediately the Commissioner grants a limited exception to the regulation 5 AAC 39.198 allowing foreign vessels to receive fish resources from fishermen licensed under the laws and regulations of the State, process those resources at designated areas and transport those resources through the waters of Alaska. These activities would be carried out under the terms of a permit issued by the Commission through the King Salmon, Dillingham, or Juneau offices of the Department. It should be emphasized that there are numerous other licensing and permitting procedures required by various State and Federal agencies and further information on those requirements are also available through the Department offices.</p> <p>The areas open to foreign processing will be Nushagak Bay, Kvichak Bay, and Egegik Bay.</p> <p>This announcement will remain in effect until rescinded by subsequent announcement which will occur when it is apparent that domestic facilities are able to take the fish that are surplus to escapement needs. At this time we have no way of determining how long the run will continue at the present level, but reiterate that when the surplus conditions ceases to exist, we will rescind the exception, allowing sufficient notice for all parties to be aware of the change.</p>

- ¹ Emergency order period: Naknek-Kvichak, Egegik, and Ugashik districts from 9:00 am, June 23 until 9:00 am July 17; Nushagak District from 9:00 am June 16 until 9:00 am July 17.
- ² Naknek section subsequently closed for 25 hours of the period by emergency order No. K11.
- ³ Closed to fishing.
- ⁴ Fishing time extended through the usual weekend closure.
- ⁵ Restricts fishing south of the red salmon boundary line.

District registration in 1979 was similar to previous years, with the Naknek-Kvichak and Nushagak districts accounting for over 76% of the total. Registration by residency continued to show an overall resident to non-resident ratio of 2 to 1, with the Naknek-Kvichak and Egegik districts having nearly equal numbers of resident and non-resident fishermen and the remaining districts primarily residents.

Sockeye Salmon

The total sockeye salmon return in 1979 of 39.8 million fish was almost triple the average historic level for comparable years in the current five-year cycle. The majority of the run consisted of returns from the 1974 brood year (66%) along with lesser numbers from 1975 (29%) and 1973 (5%). Large escapements in 1974 (9.6 million) and 1975 (19.3 million) coupled with above-average survival conditions during the intervening years resulted in exceptional numbers of both four and five-year-old returns to the Kvichak River. These two brood years included the peak magnitude escapement in 1975 (13.1 million) and a large escapement in 1974 (4.4 million) mandated by a newly adopted escapement plan for this system. This plan requires increased escapements into the Kvichak River during the year immediately preceding the peak (starting in 1969) with the objective of spreading sockeye production over several years in the system's five-year cycle.

There were 23,814 usable sockeye samples for age and length determinations and 2,884 usable weight samples. The average sockeye length was estimated to be 537.5 mm and the average weight was estimated to be 2.82 kg. The male to female sex ratio in the total run was 1.0 : 0.95.

Chinook Salmon

The chinook salmon run to Bristol Bay in 1979 was exceptionally strong and sustains a four-year trend of steadily increasing catches of this species. The commercial harvest of 213,000 chinook salmon was a historic record harvest, breaking the old record set in 1919 and was well above the 20-year average catch of 90,000 fish. The Nushagak District produced over 73% of the chinook harvest and continues to dominate production of this species. The estimated escapement of 95,000 chinook salmon to major Nushagak streams was also above average.

Chum Salmon

The area chum salmon harvest of nearly 907,000 fish far exceeded the long term average and was the eighth largest catch ever made. The Nushagak District accounted for almost 49% of the total harvest. The 220,000 chum catch from the Togiak District was one of the largest in recent years although down from the record levels set in 1977 and 1978 of 271,000 and 275,000 fish respectively.

Escapement estimates for chum salmon are made only in the Nushagak and Togiak districts where over 70% of the Bristol Bay harvest of this species occurs. Escapements were about average in Nushagak streams with an estimated escapement of 166,000 fish while the escapements in Togiak were strong with 293,000 fish estimated for all major spawning areas.

Pink Salmon

Bristol Bay produces insignificant runs of this species during odd-numbered years and 1979 was no exception with a total commercial harvest of less than 4,000 fish. A majority of these fish were caught in the Togiak District and were taken incidental to the harvests of the other species.

Coho Salmon

The commercial coho harvest of over 294,000 fish for all districts combined was the largest in the history of the fishery, with the previous record catch of 293,000 occurring in 1916. The Nushagak and Togiak districts accounted for 85% of the area-wide harvest and was highlighted by a catch in the Togiak District of 119,000, almost triple the previous record of 45,000 reported in 1977. A sharp increase in coho harvests in recent years has been attributed to higher late season fishing effort and processing capacity. The run of this species was strong in all systems this season and escapements throughout the area also appeared to be large.

NAKNEK-KVICHAK DISTRICT

The sockeye salmon runs to this District historically exhibit wide fluctuations in numbers due to the cyclic production pattern of the Kvichak River sockeye stocks. Recently, this has been characterized by a single large peak year every five years (i.e., 1965, 1970, and 1975). The pre-season outlook for 1979 was for the largest (14.7 million) non-peak year run of sockeye salmon to this District since total run estimates were first made in 1956. The combined runs to this District's three major river systems totaled 24.7 million sockeye. Catches of salmon other than sockeye normally comprise a minor portion (5%) of the total in this District. Detailed catch, escapement, and biological data for salmon from this District are presented in Tables 7 through 22.

The presence of an extremely large return to the Kvichak River resulted in considerable fishing time being granted and frequent and lengthy suspensions by local processors. As a result, a limited waiver of the restriction against buying and processing of fish by foreigners was granted starting on July 6. This limited exception permitted foreign processors to purchase, process, and transport sockeye salmon from the Naknek-Kvichak District with a special permit. This special waiver remained in effect for five days until it was rescinded on July 11. By this time the lengthy suspensions and strict fishing limits that had prompted the waiver were on the decline and the processing capacity was beginning to more closely match the capacity of the fleet.

The total season harvest was 15.0 million sockeye salmon from this District. This was almost double the pre-season forecast and is the largest non-peak year harvest since 1938 despite the delayed start of the fishery due to the price dispute and the severe and lengthy restrictions placed on fishermen because of limited processing capacity. The total run to the Naknek-Kvichak District was 27.4 million, the third largest since complete catch and escapement records were retained in 1956. It actually surpassed three of the five peak years during the same period and was exceeded only by the large peak year runs in 1965 and 1970.

The Kvichak River escapement of 11.2 million was five million above the mid-point of the escapement goal and is the largest non-peak year escapement since accurate escapement records were recorded in the mid-1950's. The escapement of 925,000 sockeye to the Naknek River was just above the upper end of the management escapement range of 900,000 for this system.

Age composition of the sockeye run to the Naknek-Kvichak District in 1979 was dominated by five-year-old fish (72%) from the 1974 brood year escapement into the Kvichak River. These exceptional returns are due to the larger than usual brood year escapements at this stage of the Kvichak cycle and improved survival conditions during the past few years.

A total of 2,501 unsable samples were collected from the commercial catch for age and length determinations and 387 weight samples were taken. The average catch length was estimated to be 544 mm and the average catch weight was estimated to be 2.83 kg. A total of 2,543 and 1,083 samples respectively were taken from the escapement to the Kvichak and Naknek rivers. Biological data from the escapement are presented in the associated tables.

The 1979 harvest of the other species was dominated by a catch of 196,000 chum salmon. A large than normal coho run also occurred, but late season fishing effort and processing capacity were minimal for this species and even though the catch of 12,355 was above average, it was not indicative of the strength of the run. The 1979 catch of chinook salmon was 10,415, above the long term average of 8,000 for this species.

Sockeye salmon are harvested as mixed stocks in the Naknek-Kvichak District. The fish in the Naknek-Kvichak District catch were apportioned to the Kvichak, Branch, and Naknek rivers by applying the relative proportion of the escapement of each age class from each contributing river to the commercial catch of that age class.

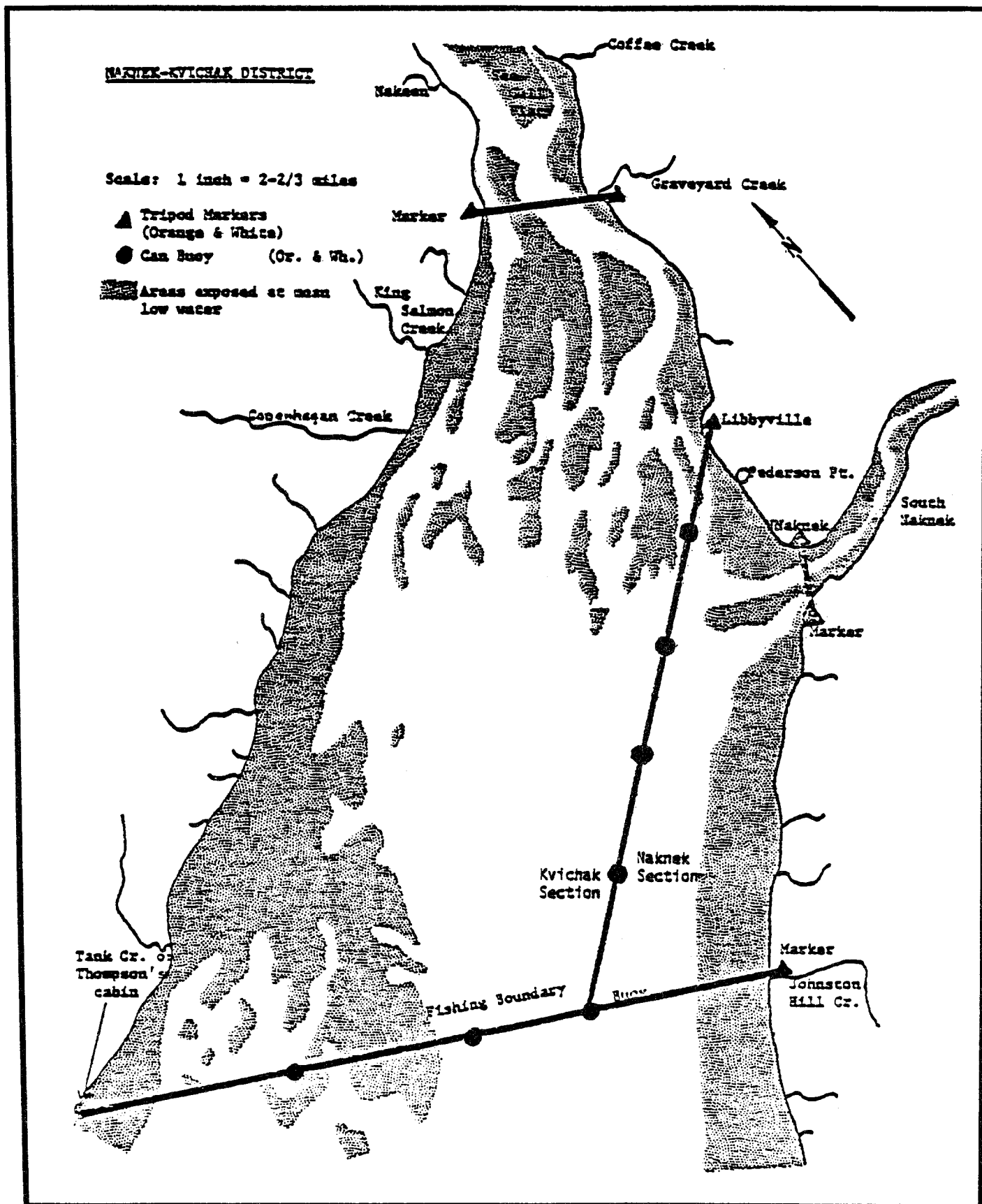


Figure 2. Naknek-Kvichak District commercial fishing boundaries, 1979.

Table 7. Naknek-Kvichak District commercial salmon catch by species and fishing effort by gear type by period, 1979.

Period		Effort		Number of Fish					Total
		Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	
5/01-6/09		4	7		134				134
6/11-16	5 days	17	35	1,885	3,156			3	5,044
6/18-23	5 days	582	156	726,253	3,983	5,891		8	736,135
6/24-27	3½ days	165	111	550,704	149	2,638			553,491
6/28-30	3 days	808	240	3,447,852	162	12,057	1	3	3,460,075
7/01-03	3 days ¹	815	246	2,850,786	584	13,059	2	5	2,864,436
7/04-06	3 days	864	246	2,790,204	103	13,331		7	2,803,645
7/07-09	3 days	892	223	1,639,656	895	25,375	2	24	1,665,952
7/10-12	3 days	865	199	1,793,750	409	28,666	3	754	1,823,582
7/13-15	3 days	744	175	750,065	71	23,356	21	1,140	774,653
7/16-21	5½ days	543	194	390,708	549	28,053	34	1,823	421,167
7/23-28	5 days	218	98	42,829	146	19,431	41	2,644	65,091
7/30-8/04	5 days	63	45	6,271	49	21,761	23	4,067	32,171
8/06-11	5 days	17	14	690	18	2,160	4	1,003	3,875
8/13-18	5 days		6	160	5	605	2	780	1,552
8/20-30	-	6	3	13	2	15	1	94	125
Total				14,991,825	10,415	196,398	134	12,355	15,211,128
Percent of District Catch				98.5	0.1	1.3	+	0.1	100.0

¹ Naknek section subsequently closed to fishing for 25 hours from 2 am July 1 until 3 am July 2.

Table 8. Naknek-Kvichak District inshore return of sockeye salmon by age group and sex, 1979.

	AGE GROUP										
	32	42	43	52	53	62	63	64	73	74	TOTAL
MALES											
ESCAPEMENT	31,492	1,583,896	271,015	376,833	3,479,316	--	99,991	7,140	--	--	5,849,683
CATCH	--	1,599,975	23,039	582,491	4,863,324	--	304,378	7,283	--	--	7,380,490
TOTAL	31,492	3,183,871	294,054	959,324	8,342,640	--	404,369	14,423	--	--	13,230,173
PERCENT	.24	24.06	2.22	7.25	63.06	--	3.06	.11	--	--	48.23
FEMALES											
ESCAPEMENT	747	1,668,297	--	459,230	4,276,871	--	181,674	--	747	747	6,588,313
CATCH	--	1,500,266	--	716,670	4,937,396	3,362	437,887	15,755	--	--	7,611,336
TOTAL	747	3,168,563	--	1,175,900	9,214,267	3,362	619,561	15,755	747	747	14,199,649
PERCENT	.01	22.31	--	8.28	64.89	.02	4.36	.11	.01	.01	51.77
SEXES COMBINED											
ESCAPEMENT	32,239	3,252,193	271,015	836,063	7,756,187	--	281,665	7,140	747	747	12,437,996
CATCH	--	3,100,241	23,039	1,299,161	9,800,720	3,362	742,265	23,038	--	--	14,991,826
TOTAL	32,239	6,352,434	294,054	2,135,224	17,556,907	3,362	1,023,930	30,178	747	747	27,429,822
PERCENT	.12	23.16	1.07	7.79	64.01	.01	3.73	.11	--	--	100.00

Table 9. Naknek-Kvichak District commercial catch of sockeye salmon by sex and sample period, 1979.

PERIOD NUMBER	DATE	NO. OF FISH SAMPLED	COUNT		PERCENT		CATCH	NUMBER IN CATCH	
			MALES	FEMALES	MALES	FEMALES		MALES	FEMALES
1	06/11-06/28	612	296	316	48.37	51.63	2,057,312	995,040	1,062,272
2	06/29-07/02	624	329	295	52.72	47.28	4,544,742	2,396,186	2,148,556
3	07/03-07/09	638	304	334	47.65	52.35	5,405,286	2,575,559	2,829,727
4	07/10-08/22	627	297	330	47.37	52.63	2,984,486	1,413,704	1,570,782
TOTAL		2,501	1,226	1,275	49.23	50.77	14,991,826	7,380,489	7,611,337

Table 10. Naknek-Kvichak District commercial catch of sockeye salmon by age group, sex, and sample period, 1979.

			AGE GROUP							
SAMPLE PERIOD	DATE		42	43	52	53	62	63	64	TOTAL
MALES										
1	06/11-06/28	COUNT	221,867	—	77,317	621,900	—	73,956	—	995,040
		PERCENT	22.30	—	7.77	62.50	—	7.43	—	13.48
2	06/29-07/02	COUNT	524,393	14,566	167,515	1,660,579	—	21,850	7,283	2,396,186
		PERCENT	21.88	.61	6.99	69.30	—	.91	.30	32.47
3	07/03-07/09	COUNT	525,279	8,472	194,861	1,685,975	—	160,972	—	2,575,559
		PERCENT	20.39	.33	7.57	65.46	—	6.25	—	34.90
4	07/10-08/22	COUNT	328,436	—	142,798	894,870	—	47,600	—	1,413,704
		PERCENT	23.23	—	10.10	63.30	—	3.37	—	19.15
COLUMN TOTALS		COUNT	1,599,975	23,038	582,491	4,863,324	—	304,378	7,283	7,380,489
		PERCENT	21.68	.31	7.89	65.90	—	4.12	.10	100.00
FEMALES										
1	06/11-06/28	COUNT	171,443	—	114,295	732,833	3,362	40,339	—	1,062,272
		PERCENT	16.14	—	10.76	68.99	.32	3.80	—	13.95
2	06/29-07/02	COUNT	313,179	—	240,347	1,500,348	—	87,399	7,283	2,148,556
		PERCENT	14.58	—	11.19	69.83	—	4.07	.34	28.23
3	07/03-07/09	COUNT	601,529	—	228,750	1,804,587	—	186,389	8,472	2,829,727
		PERCENT	21.26	—	8.08	63.77	—	6.59	.30	37.18
4	07/10-08/22	COUNT	414,115	—	133,278	899,630	—	123,759	—	1,570,782
		PERCENT	26.36	—	8.48	57.27	—	7.88	—	20.64
COLUMN TOTALS		COUNT	1,500,266	—	716,670	4,937,398	3,362	437,886	15,755	7,611,337
		PERCENT	19.71	—	9.42	64.87	.04	5.75	.21	100.00
SEXES COMBINED										
1	06/11-06/28	COUNT	393,310	—	191,612	1,354,733	3,362	114,295	—	2,057,312
		PERCENT	19.12	—	9.31	65.85	.16	5.56	—	13.72
2	06/29-07/02	COUNT	837,572	14,566	407,862	3,160,927	—	109,249	14,566	4,544,742
		PERCENT	18.43	.32	8.98	69.55	—	2.40	.32	30.31
3	07/03-07/09	COUNT	1,126,808	8,472	423,611	3,490,562	—	347,361	8,472	5,405,286
		PERCENT	20.84	.16	7.84	64.58	—	6.42	.16	36.06
4	07/10-08/22	COUNT	742,551	—	276,076	1,794,500	—	171,359	—	2,984,486
		PERCENT	24.88	—	9.25	60.13	—	5.74	—	19.91
COLUMN TOTALS		COUNT	3,100,241	23,038	1,299,161	9,800,722	3,362	742,264	23,038	14,991,826
		PERCENT	20.68	.15	8.67	65.38	.02	4.95	.15	100.00

Table 11. Naknek-Kvichak District commercial catch of sockeye salmon by age group and sex with length (mm) and weight (kg), 1979.

	AGE GROUP							
	42	43	52	53	62	63	64	TOTAL
MALES								
NUMBER	1,599,975	23,038	582,491	4,863,324	0	304,378	7,283	7,380,489
AV LENGTH	541.78	512.14	588.63	549.41		577.00	543.00	551.87
STD ERROR	1.27	12.02	3.38	.68		3.68		.61
SAMP SIZE	269	3	99	800	0	54	1	1,226
AV WEIGHT	2.86		3.63	2.94		3.46		2.99
STD ERROR	.05		.11	.03		.18		.03
SAMP SIZE	37	0	19	119	0	9	0	184
FEMALES								
NUMBER	1,500,266	0	716,670	4,937,398	3,362	437,886	15,755	7,611,337
AV LENGTH	533.07		561.72	550.87	584.00	326.27	565.65	535.51
STD ERROR	1.30		2.52	.73		3.33		.62
SAMP SIZE	252	0	122	826	1	72	2	1,275
AV WEIGHT	2.59		3.31	2.55	3.18	3.22		2.67
STD ERROR	.06		.08	.03		.06		.02
SAMP SIZE	33	0	23	139	1	7	0	203
SEXES COMBINED								
NUMBER	3,100,241	23,038	1,299,161	9,800,722	3,362	742,264	23,038	4,991,826
AV LENGTH	537.56	512.14	573.79	550.15	584.00	429.09	558.49	543.56
STD ERROR	.91	12.02	2.06	.50		2.47		.44
SAMP SIZE	521	3	221	1,626	1	126	3	2,501
AV WEIGHT	2.73		3.45	2.74	3.18	3.31		2.83
STD ERROR	.04		.06	.02		.10		.02
SAMP SIZE	70	0	42	258	1	16	0	387

Table 12. Kvichak River apportioned catch and escapement of sockeye salmon by age group and sex, 1979.

	AGE GROUP								
	32	42	43	52	53	62	63	64	TOTAL
CATCH									
MALES									
NUMBER	--	1,334,647	22,225	571,128	4,445,140	--	287,715	7,283	6,668,138
PERCENT	--	20.02	.33	8.57	66.66	--	4.31	.11	49.69
FEMALES									
NUMBER	--	1,347,228	--	600,542	4,688,460	3,362	95,344	15,755	6,750,691
PERCENT	--	19.96	--	8.90	69.45	.05	1.41	.23	50.31
SEXES COMBINED									
NUMBER	--	2,681,875	22,225	1,171,670	9,133,600	3,362	383,059	23,038	13,418,829
PERCENT	--	19.99	.17	8.73	68.07	.02	2.85	.17	100.00
ESCAPEMENT									
MALES									
NUMBER	1,868	1,321,234	260,324	369,482	3,180,139	--	94,517	7,140	5,234,704
PERCENT	.04	25.24	4.97	7.06	60.75	--	1.80	.14	46.66
FEMALES									
NUMBER	--	1,498,119	--	384,817	4,061,237	--	39,557	--	5,983,730
PERCENT	--	25.04	--	6.43	67.87	--	.66	--	53.34
SEXES COMBINED									
NUMBER	1,868	2,819,353	260,324	754,299	7,241,376	--	134,074	7,140	11,218,434
PERCENT	.02	25.13	2.32	6.72	64.55	--	1.20	.06	100.00
CATCH AND ESCAPEMENT									
MALES									
NUMBER	1,868	2,655,881	282,549	940,610	7,625,279	--	382,232	14,423	11,902,842
PERCENT	.02	22.31	2.38	7.90	64.06	--	3.21	.12	48.31
FEMALES									
NUMBER	--	2,845,347	--	985,359	8,749,697	3,362	134,901	15,755	12,734,421
PERCENT	--	22.34	--	7.74	68.71	.03	1.06	.12	51.69
SEXES COMBINED									
NUMBER	1,868	5,501,228	282,549	1,925,969	16,374,976	3,362	517,133	30,178	24,637,263
PERCENT	.01	22.33	1.15	7.82	66.46	.01	2.10	.12	100.00

Table 13. Kvichak River daily sockeye salmon escapement counts, 1979.

DATE	DAILY COUNT	ACCUMULATIVE COUNT	DAILY PERCENT OF TOTAL	ACCUMULATIVE PERCENT
JUNE 20	696	696	0.01	0.01
21	498	1,194	0.	0.01
22	612	1,806	0.01	0.02
23	396	2,202	0.	0.02
24	222	2,424	0.	0.02
25	356,430	358,854	3.18	3.20
26	686,868	1,045,722	6.12	9.32
27	850,170	1,895,892	7.58	16.90
28	887,382	2,783,274	7.91	24.81
29	1,015,074	3,798,348	9.05	33.86
30	975,168	4,773,516	8.69	42.55
JULY 1	557,016	5,330,532	4.96	47.51
2	585,012	5,915,544	5.21	52.72
3	925,692	6,841,236	8.25	60.97
4	640,218	7,481,454	5.71	66.68
5	492,762	7,974,216	4.39	71.07
6	486,090	8,460,306	4.33	75.40
7	667,410	9,127,716	5.95	81.35
8	573,660	9,701,376	5.11	86.46
9	446,460	10,147,836	3.98	90.44
10	294,828	10,442,664	2.63	93.07
11	220,122	10,662,786	1.96	95.03
12	107,712	10,770,498	0.96	95.99
13	90,576	10,861,074	0.81	96.80
14	68,160	10,929,234	0.61	97.41
15	76,992	11,006,226	0.69	98.10
16	57,696	11,063,922	0.51	98.61
17	48,888	11,112,810	0.44	99.05
18	38,922	11,151,732	0.35	99.40
19	25,614	11,177,346	0.23	99.63
20	23,220	11,200,566	0.21	99.84
21	10,050	11,210,616	0.09	99.93
22	6,468	11,217,084	0.06	99.99
23	1,350	11,218,434	0.01	100.00

Table 14. Kvichak River escapement of sockeye salmon by sex and sample period, 1979.

PERIOD NUMBER	DATE	NO. OF FISH SAMPLED	COUNT		PERCENT		ESCAPEMENT	NUMBER IN ESCAPEMENT	
			MALES	FEMALES	MALES	FEMALES		MALES	FEMALES
1	06/20-06/28	601	310	291	51.58	48.42	2,783,274	1,435,632	1,347,642
2	06/29-07/04	658	296	362	44.98	55.02	4,698,180	2,113,467	2,584,713
3	07/05-07/09	711	302	409	42.48	57.52	2,666,382	1,132,556	1,533,826
4	07/10-07/23	573	296	277	51.66	48.34	1,070,598	553,049	517,549
TOTAL		2,543	1,204	1,339	46.66	53.34	11,218,434	5,234,704	5,983,730

Table 15. Kvichak River escapement of sockeye salmon by age group, sex, and sample period, 1979.

			AGE GROUP							
SAMPLE PERIOD	DATE		32	42	43	52	53	63	64	TOTAL
MALES										
1	06/20-	COUNT	--	324,175	32,417	74,097	967,894	37,049	--	1,435,632
	06/28	PERCENT	--	22.58	2.26	5.16	67.42	2.58	--	27.43
2	06/29-	COUNT	--	478,386	85,681	164,222	1,328,057	49,981	7,140	2,113,467
	07/04	PERCENT	--	22.64	4.05	7.77	62.84	2.36	.34	40.37
3	07/05-	COUNT	--	315,016	63,753	105,005	645,032	3,750	--	1,132,556
	07/09	PERCENT	--	27.81	5.63	9.27	56.95	.33	--	21.64
4	07/10-	COUNT	1,868	203,657	78,473	26,158	239,156	3,737	--	553,049
	07/23	PERCENT	.34	36.82	14.19	4.73	43.24	.68	--	10.56
COLUMN TOTALS		COUNT	1,868	1,321,234	260,324	369,482	3,180,139	94,517	7,140	5,234,704
		PERCENT	.04	25.24	4.97	7.06	60.75	1.80	.14	100.00
FEMALES										
1	06/20-	COUNT	--	199,136	--	97,253	1,018,836	32,417	--	1,347,642
	06/28	PERCENT	--	14.78	--	7.22	75.60	2.41	--	22.52
2	06/29-	COUNT	--	699,729	--	171,362	1,706,482	7,140	--	2,584,713
	07/04	PERCENT	--	27.07	--	6.63	66.02	.28	--	43.20
3	07/05-	COUNT	--	382,519	--	101,255	1,050,052	--	--	1,533,826
	07/09	PERCENT	--	24.94	--	6.60	68.46	--	--	25.63
4	07/10-	COUNT	--	216,735	--	14,947	285,867	--	--	517,549
	07/23	PERCENT	--	41.88	--	2.89	55.23	--	--	8.65
COLUMN TOTALS		COUNT	--	1,498,119	--	384,817	4,061,237	39,557	--	5,983,730
		PERCENT	--	25.04	--	6.43	67.87	.66	--	100.00
SEXES COMBINED										
1	06/20-	COUNT	--	523,311	32,417	171,350	1,986,730	69,466	--	2,783,274
	06/28	PERCENT	--	18.80	1.16	6.16	71.38	2.50	--	24.81
2	06/29-	COUNT	--	1,178,115	85,681	335,584	3,034,539	57,121	7,140	4,698,180
	07/04	PERCENT	--	25.08	1.82	7.14	64.59	1.22	.15	41.88
3	07/05-	COUNT	--	697,535	63,753	206,260	1,695,084	3,750	--	2,666,382
	07/09	PERCENT	--	26.16	2.39	7.74	63.57	.14	--	23.77
4	07/10-	COUNT	1,868	420,392	78,473	41,105	525,023	3,737	--	1,070,598
	07/23	PERCENT	.17	39.27	7.33	3.84	49.04	.35	--	9.54
COLUMN TOTALS		COUNT	1,868	2,819,353	260,324	754,299	7,241,376	134,074	7,140	11,218,434
		PERCENT	.02	25.13	2.32	6.72	64.55	1.20	.06	100.00

Table 16. Kvichak River escapement of sockeye salmon by age group and sex with length (mm), 1979.

	AGE GROUP							
	32	42	43	52	53	63	64	TOTAL
MALES								
NUMBER	1,868	1,321,234	260,324	369,482	3,180,139	94,517	7,140	5,234,704
AV LENGTH	380.00	524.93	389.67	584.41	534.25	571.48	505.00	528.82
STD ERROR		1.31	2.74	3.28	.96	5.75		.73
SAMP SIZE	1	330	78	81	695	18	1	1,204
FEMALES								
NUMBER	0	1,498,119	0	384,817	4,061,237	39,557	0	5,983,730
AV LENGTH		511.57		575.90	520.31	544.01		521.86
STD ERROR		1.21		2.49	.74	11.31		.61
SAMP SIZE	0	359	0	80	892	8	0	1,339
SEXES COMBINED								
NUMBER	1,868	2,819,353	260,324	754,299	7,241,376	134,074	7,140	1,218,434
AV LENGTH	380.00	517.83	389.67	580.07	526.43	563.38	505.00	525.11
STD ERROR		.89	2.74	2.06	.59	5.29		.47
SAMP SIZE	1	689	78	161	1,587	26	1	2,543

Table 17. Branch River apportioned catch and escapement of sockeye salmon by age group and sex, 1979.

	AGE GROUP					
	32	42	52	53	63	TOTAL
CATCH						
MALES						
NUMBER	--	104,015	5,229	38,449	895	148,588
PERCENT	--	70.00	3.52	25.88	.60	53.27
FEMALES						
NUMBER	--	92,600	5,281	31,756	709	130,346
PERCENT	--	71.04	4.05	24.36	.55	46.73
SEXES COMBINED						
NUMBER	--	196,615	10,510	70,205	1,604	278,934
PERCENT	--	70.49	3.77	25.17	.57	100.00
ESCAPEMENT						
MALES						
NUMBER	25,889	102,970	3,383	27,507	294	160,043
PERCENT	16.18	64.34	2.11	17.19	.18	54.40
FEMALES						
NUMBER	--	102,971	3,384	27,508	294	134,157
PERCENT	--	76.75	2.52	20.51	.22	45.60
SEXES COMBINED						
NUMBER	25,889	205,941	6,767	55,015	588	294,200
PERCENT	8.80	70.00	2.30	18.70	.20	100.00
CATCH AND ESCAPEMENT						
MALES						
NUMBER	25,889	206,985	8,612	65,956	1,189	308,631
PERCENT	8.39	67.07	2.79	21.37	.38	53.85
FEMALES						
NUMBER	--	195,571	8,665	59,264	1,003	264,503
PERCENT	--	73.94	3.28	22.40	.38	46.15
SEXES COMBINED						
NUMBER	25,889	402,556	17,277	125,220	2,192	573,134
PERCENT	4.52	70.24	3.01	21.85	.38	100.00

Table 18. Naknek River apportioned catch and escapement of sockeye salmon by age group and sex, 1979.

	AGE GROUP								TOTAL
	32	42	43	52	53	63	73	74	
CATCH									
MALES									
NUMBER	--	161,313	814	6,134	379,735	15,768	--	--	563,764
PERCENT	--	28.61	.14	1.09	67.36	2.80	--	--	43.57
FEMALES									
NUMBER	--	60,438	--	110,847	217,180	341,834	--	--	730,299
PERCENT	--	8.27	--	15.18	29.74	46.81	--	--	56.43
SEXES COMBINED									
NUMBER	--	221,751	814	116,981	596,915	357,602	--	--	1,294,063
PERCENT	--	17.14	.06	9.04	46.13	27.63	--	--	100.00
ESCAPEMENT									
MALES									
NUMBER	3,735	159,692	10,691	3,968	271,670	5,180	--	--	454,936
PERCENT	.82	35.10	2.35	.87	59.72	1.14	--	--	49.16
FEMALES									
NUMBER	747	67,207	--	71,029	188,126	141,823	747	747	470,426
PERCENT	.16	14.28	--	15.10	39.99	30.15	.16	.16	50.84
SEXES COMBINED									
NUMBER	4,482	226,899	10,691	74,997	459,796	147,003	747	747	925,362
PERCENT	.48	24.52	1.16	8.10	49.69	15.89	.08	.08	100.00
CATCH AND ESCAPEMENT									
MALES									
NUMBER	3,735	321,005	11,505	10,102	651,405	20,948	--	--	1,018,700
PERCENT	.37	31.51	1.13	.99	63.94	2.06	--	--	45.90
FEMALES									
NUMBER	747	127,645	--	181,876	405,306	483,657	747	747	1,200,725
PERCENT	.06	10.63	--	15.15	33.76	40.28	.06	.06	54.10
SEXES COMBINED									
NUMBER	4,482	448,650	11,505	191,978	1,056,711	504,605	747	747	2,219,425
PERCENT	.20	20.22	.52	8.65	47.61	22.74	.03	.03	100.00

Table 19. Naknek River daily sockeye salmon escapement counts, 1979.

DATE	DAILY COUNT	ACCUMULATIVE COUNT	DAILY PERCENT OF TOTAL	ACCUMULATIVE PERCENT
JUNE 18	0	0	0.	0.
19	48	48	0.01	0.01
20	1,338	1,386	0.14	0.15
21	0	1,386	0.	0.15
22	48	1,434	0.01	0.16
23	138	1,572	0.01	0.17
24	16,338	17,910	1.77	1.94
25	133,716	151,626	14.45	16.39
26	98,424	250,050	10.64	27.03
27	106,122	356,172	11.47	38.50
28	133,692	489,864	14.45	52.95
29	45,894	535,758	4.96	57.91
30	14,550	550,308	1.57	59.48
JULY 1	55,596	605,904	6.01	65.49
2	89,046	694,950	9.62	75.11
3	17,088	712,038	1.85	76.96
4	30,624	742,662	3.31	80.27
5	33,972	776,634	3.67	83.94
6	56,202	832,836	6.07	90.01
7	40,512	873,348	4.38	94.39
8	12,330	885,678	1.33	95.72
9	6,870	892,548	0.74	96.46
10	3,648	896,196	0.39	96.85
11	8,838	905,034	0.95	97.80
12	7,092	912,126	0.77	98.57
13	5,244	917,370	0.57	99.14
14	4,050	921,420	0.44	99.58
15	2,244	923,664	0.24	99.82
16	1,698	925,362	0.18	100.00

Table 20. Naknek River escapement of sockeye salmon by sex and sample period, 1979.

PERIOD NUMBER	DATE	NO. OF FISH SAMPLED	COUNT		PERCENT		ESCAPEMENT	NUMBER IN ESCAPEMENT	
			MALES	FEMALES	MALES	FEMALES		MALES	FEMALES
1	06/18-06/28	500	244	256	48.80	51.20	489,864	239,054	250,810
2	06/29-07/16	583	289	294	49.57	50.43	435,498	215,882	219,616
TOTAL		1,083	533	550	49.16	50.84	925,362	454,936	470,426

Table 21. Naknek River escapement of sockeye salmon by age group, sex, and sample period, 1979.

			AGE GROUP								
SAMPLE PERIOD	DATE		32	42	43	52	53	63	73	74	TOTAL
MALES											
1	06/18-	COUNT	--	99,932	980	980	134,223	2,939	--	--	239,054
	06/28	PERCENT	--	41.80	.41	.41	56.15	1.23	--	--	52.55
2	06/29-	COUNT	3,735	59,760	9,711	2,988	137,447	2,241	--	--	215,882
	07/16	PERCENT	1.73	27.68	4.50	1.38	63.67	1.04	--	--	47.45
COLUMN TOTALS		COUNT	3,735	159,692	10,691	3,968	271,670	5,180	--	--	454,936
		PERCENT	.82	35.10	2.35	.87	59.72	1.14	--	--	100.00
FEMALES											
1	06/18-	COUNT	--	31,351	--	41,149	96,993	81,317	--	--	250,810
	06/28	PERCENT	--	12.50	--	16.41	38.67	32.42	--	--	53.32
2	06/29-	COUNT	747	35,856	--	29,880	91,133	60,506	747	747	219,616
	07/16	PERCENT	.34	16.33	--	13.61	41.50	27.55	.34	.34	46.68
COLUMN TOTALS		COUNT	747	67,207	--	71,029	188,126	141,823	747	747	470,426
		PERCENT	.16	14.28	--	15.10	39.99	30.15	.16	.16	100.00
SEXES COMBINED											
1	06/18-	COUNT	--	131,283	980	42,129	231,216	84,256	--	--	489,864
	06/28	PERCENT	--	26.80	.20	8.60	47.20	17.20	--	--	52.94
2	06/29-	COUNT	4,482	95,616	9,711	32,868	228,580	62,747	747	747	435,498
	07/16	PERCENT	1.03	21.95	2.23	7.55	52.49	14.41	.17	.17	47.06
COLUMN TOTALS		COUNT	4,482	226,899	10,691	74,997	459,796	147,003	747	747	925,362
		PERCENT	.48	24.52	1.16	8.10	49.69	15.89	.08	.08	100.00

Table 22. Naknek River escapement of sockeye salmon by age group and sex with length (mm), 1979.

	AGE GROUP								
	32	42	43	52	53	63	73	74	TOTAL
MALES									
NUMBER	3,735	159,692	10,691	3,968	271,670	5,180	0	0	454,936
AV LENGTH	339.80	467.66	377.47	576.59	489.54	576.96			479.75
STD ERROR	7.47	2.24	4.35	.20	1.92	.45			1.39
SAMP SIZE	5	182	14	5	321	6	0	0	533
FEMALES									
NUMBER	747	67,207	0	71,029	188,126	141,823	747	747	470,426
AV LENGTH	350.00	478.03		558.67	499.32	564.91	611.00	556.00	525.04
STD ERROR		2.43		2.27	2.01	1.61			1.06
SAMP SIZE	1	80	0	82	221	164	1	1	550
SEXES COMBINED									
NUMBER	4,482	226,899	10,691	74,997	459,796	147,003	747	747	925,362
AV LENGTH	341.50	470.73	377.47	559.62	493.54	565.33	611.00	556.00	502.78
STD ERROR	6.22	1.72	4.35	2.14	1.40	1.56			.87
SAMP SIZE	6	262	14	87	542	170	1	1	1,083

EGEGIK DISTRICT

The 1979 pre-season forecast for the Egegik District was 2.2 million sockeye salmon, leading to an estimated harvest of 1.6 million after escapement requirements of 600,000 were met. The actual run to the District was 3.3 million with an escapement of 1.0 million and harvest of 2.3 million (Tables 23 through 31). Peak fishing effort occurred just before the emergency regulatory period when 264 drift and 116 set units were participating in the fishery. Peak effort during the emergency regulatory occurred during the June 29-30 fishing period with 193 drift and 124 set units operating.

Foreign vessels were allowed to process and receive fish from Egegik fishermen on July 6 by Commissioner's announcement. One foreign vessel participated in the fishery and received and processed 268,000 pounds of fish from the Egegik District during the July 6-7 time period. The Commissioner rescinded the foreign processing exception at 6:00 p.m. on July 11 when the catch rate dropped to a point where the domestic industry could process the daily catch without assistance.

Sockeye escapement past the Egegik counting tower through July 1 reached 512,000 the lower end of the escapement range, while an aerial survey of the lagoon on the same day indicated another 79,000 fish. With the escapement goal assured, fishing was extended until further notice.

A total of 2,429 usable sockeye samples were collected from the commercial catch for age and length determinations and 147 samples were weighed. The average length and weight of the catch is estimated to be 552 mm and 2.61 kg and the average length in the escapement is estimated to be 546 mm. The sockeye salmon run to Egegik was composed primarily of 5₃ age class (66%) followed by the 6₃ age class (25%) from the 1974 and 1973 brood years, respectively. The male to female sex ratio for the catch was 1.0 : 0.9, for the escapement 1.0 : 1.1, and for the total run 1.0 : 1.0.

The total catch of other salmon species in the Egegik District amounted to 59,000 fish. The chinook salmon catch of 6,000 and the chum salmon catch of 38,000 were both above average for this District, while the coho salmon catch of 15,000 was nearly five times the 20-year average and was the largest in the last 20 years.

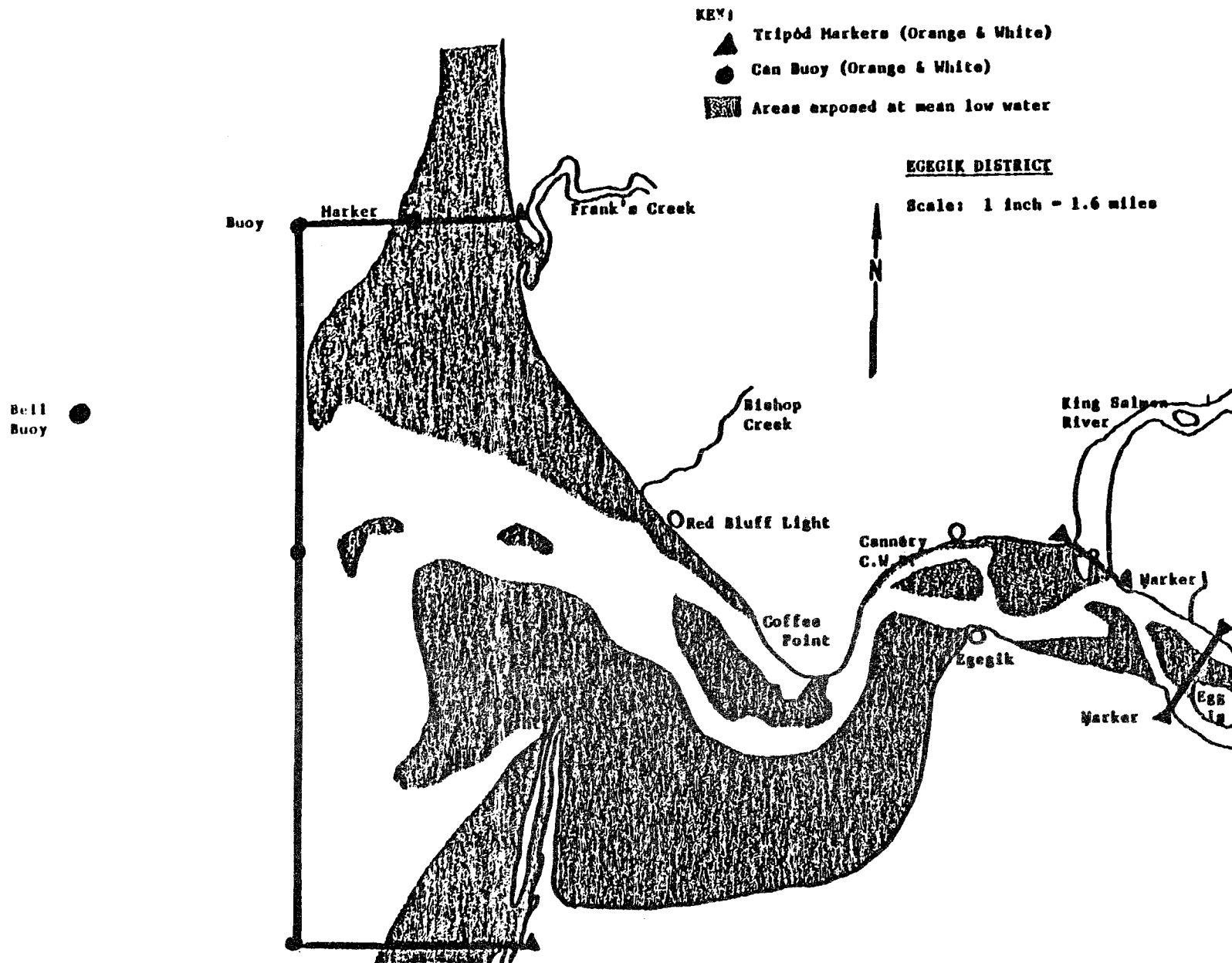


Figure 3. Egegik District commercial fishing boundaries, 1979.

Table 23. Egegik District commercial salmon catch by species and fishing effort by gear type by period, 1979.

Period	Time	Effort		Number of Fish					Total
		Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	
5/28-6/2	5 days				124				124
6/ 4- 9	5 days	17	18	123	605				728
6/11-16	5 days	47	56	5,955	1,948				7,903
6/18-23	5 days	264	116	256,275	1,927	3,556			261,758
6/24-25	24 hours			120,784	338	568			121,690
6/26	12 hours	118	134	142,363	166	846			143,375
6/28	12 hours	193	124	146,823	71	922			147,816
6/29-30	24 hours ¹			203,590	104	1,985			205,679
7/ 2- 7	141 hours ²	171	148	922,192	140	7,655			929,987
7/ 8-14	7 days	145	122	375,789	88	10,009	2		385,888
7/15-21	153 hours	68	85	79,453	22	8,351	4		87,830
7/23-28	5 days	11	24	3,574	7	1,820		1,364	6,765
7/30-8/4	5 days	11	13	411	1	1,622		3,477	5,511
8/ 6-11	5 days	10	15		6	667		5,305	5,978
8/13-18	5 days		1					95	95
8/20-25	5 days					3		3,293	3,296
8/27-9/1	5 days	2	8					1,305	1,305
9/ 3- 8	5 days							309	309
Total				2,257,332	5,547	38,004	6	15,148	2,316,037
Percent of District Catch				97.5	0.2	1.6	+	0.7	100.0

¹ A 12-hour period followed by a 12-hour extension.

² A 12-hour period followed by an announcement for continuous fishing until 9 a.m. July 17.

Table 24. Egegik River catch and escapement of sockeye salmon by age group and sex, 1979.

		AGE GROUP										
		31	32	42	43	52	53	63	64	74	84	TOTAL
CATCH												
MALES												
NUMBER	0	0	60,810	0	20,706	781,827	279,200	11,617	5,573	0		1,159,733
PERCENT	0.00	0.00	2.69	0.00	.92	34.64	12.37	.51	.25	0.00		51.38
FEMALES												
NUMBER	1,012	506	57,522	3,007	45,844	667,068	303,323	10,568	8,749	0		1,097,599
PERCENT	.04	.02	2.55	.13	2.03	29.55	13.44	.47	.39	0.00		48.62
SEXES COMBINED												
NUMBER	1,012	506	118,332	3,007	66,550	1,448,895	582,523	22,185	14,322	0		2,257,332
PERCENT	.04	.02	5.24	.13	2.95	64.19	25.81	.98	.63	0.00		100.00
ESCAPEMENT												
MALES												
NUMBER	0	0	14,047	5,622	16,007	328,144	112,586	5,600	1,882	0		483,888
PERCENT	0.00	0.00	1.36	.54	1.55	31.80	10.91	.54	.18	0.00		46.89
FEMALES												
NUMBER	0	0	11,336	0	13,452	388,944	124,440	7,919	1,708	355		548,154
PERCENT	0.00	0.00	1.10	0.00	1.30	37.69	12.06	.77	.17	.03		53.11
SEXES COMBINED												
NUMBER	0	0	25,383	5,622	29,459	717,088	237,026	13,519	3,590	355		1,032,042
PERCENT	0.00	0.00	2.46	.54	2.85	69.48	22.97	1.31	.35	.03		100.00
CATCH AND ESCAPEMENT												
MALES												
NUMBER	0	0	74,857	5,622	36,713	1,109,971	391,786	17,217	7,455	0		1,643,621
PERCENT	0.00	0.00	2.28	.17	1.12	33.74	11.91	.52	.23	0.00		49.97
FEMALES												
NUMBER	1,012	506	68,858	3,007	59,296	1,056,012	427,763	18,487	10,457	355		1,645,753
PERCENT	.03	.02	2.09	.09	1.80	32.10	13.00	.56	.32	.01		50.03
SEXES COMBINED												
NUMBER	1,012	506	143,715	8,629	96,009	2,165,983	819,549	35,704	17,912	355		3,289,374
PERCENT	.03	.02	4.37	.26	2.92	65.85	24.92	1.09	.54	.01		100.00

Table 25. Egegik District commercial catch of sockeye salmon by sex and sample period, 1979.

PERIOD NUMBER	DATE	NO. OF FISH SAMPLED	COUNT		PERCENT		CATCH	NUMBER IN CATCH	
			MALES	FEMALES	MALES	FEMALES		MALES	FEMALES
1	06/01-07/03	690	381	309	55.22	44.78	1,282,616	708,227	574,389
2	07/04-07/06	698	344	354	49.28	50.72	447,871	220,727	227,144
3	07/07-08/04	1,041	456	585	43.80	56.20	526,845	230,779	296,066
TOTAL		2,429	1,181	1,248	51.38	48.62	2,257,332	1,159,733	1,097,599

Table 26. Egegik District commercial catch of sockeye salmon by age group, sex, and sample period, 1979.

		AGE GROUP										
SAMPLE PERIOD	DATE		31	32	42	43	52	53	63	64	74	TOTAL
MALES												
1	06/01-07/03	COUNT	--	--	42,754	--	11,153	524,199	124,544	3,718	1,859	708,227
		PERCENT	--	--	6.04	--	1.57	74.02	17.59	.52	.26	61.07
2	07/04-07/06	COUNT	--	--	6,416	--	4,492	136,671	66,090	3,850	3,208	220,727
		PERCENT	--	--	2.91	--	2.03	61.92	29.94	1.74	1.45	19.03
3	07/07-08/04	COUNT	--	--	11,640	--	5,061	120,957	88,566	4,049	506	230,779
		PERCENT	--	--	5.04	--	2.19	52.41	38.38	1.75	.22	19.90
COLUMN TOTALS		COUNT	--	--	60,810	--	20,706	781,827	279,200	11,617	5,573	1,159,733
		PERCENT	--	--	5.24	--	1.79	67.41	24.08	1.00	.48	100.00
FEMALES												
1	06/01-07/03	COUNT	--	--	35,318	1,859	31,601	355,043	141,274	3,718	5,576	574,389
		PERCENT	--	--	6.15	.32	5.50	61.81	24.60	.65	.97	52.33
2	07/04-07/06	COUNT	--	--	4,491	642	5,133	145,013	69,940	1,283	642	227,144
		PERCENT	--	--	1.98	.28	2.26	63.84	30.79	.56	.28	20.70
3	07/07-08/04	COUNT	1,012	506	17,713	506	9,110	167,012	92,109	5,567	2,531	296,066
		PERCENT	.34	.17	5.98	.17	3.08	56.41	31.11	1.88	.85	26.97
COLUMN TOTALS		COUNT	1,012	506	57,522	3,007	45,844	667,068	303,323	10,568	8,749	1,097,599
		PERCENT	.09	.05	5.24	.27	4.18	60.78	27.63	.96	.80	100.00
SEXES COMBINED												
1	06/01-07/03	COUNT	--	--	78,072	1,859	42,754	879,242	265,818	7,436	7,435	1,282,616
		PERCENT	--	--	6.09	.15	3.33	68.55	20.72	.58	.58	56.82
2	07/04-07/06	COUNT	--	--	10,907	642	9,625	281,684	136,030	5,133	3,850	447,871
		PERCENT	--	--	2.44	.14	2.15	62.89	30.37	1.15	.86	19.84
3	07/07-08/04	COUNT	1,012	506	29,353	506	14,171	287,969	180,675	9,616	3,037	526,845
		PERCENT	.19	.10	5.57	.10	2.69	54.66	34.29	1.82	.58	23.34
COLUMN TOTALS		COUNT	1,012	506	118,332	3,007	66,550	1,448,895	582,523	22,185	14,322	2,257,332
		PERCENT	.05	.02	5.24	.13	2.95	64.19	25.81	.98	.63	100.00

Table 27. Egegik District commercial catch of sockeye salmon by age group and sex with length (mm) and weight (kg), 1979.

	AGE GROUP									
	31	32	42	43	52	53	63	64	74	TOTAL
MALES										
NUMBER	0	0	60,810	0	20,706	781,827	279,200	11,617	5,573	1,159,733
AV LENGTH			542.04		588.56	544.43	596.91	546.22	583.28	557.93
STD ERROR			2.71		4.96	.72	1.30	5.87	14.89	.62
SAMP SIZE	0	0	56	0	23	734	345	16	7	1,181
AV WEIGHT			2.73		3.34	2.60	3.40			2.82
STD ERROR			.21		.54	.04	.09			.04
SAMP SIZE	0	0	2	0	3	53	16	0	0	74
FEMALES										
NUMBER	1,012	506	57,522	3,007	45,844	667,068	303,323	10,568	8,749	1,097,599
AV LENGTH	534.00	463.00	517.89	485.56	577.64	529.34	581.12	535.33	584.56	545.42
STD ERROR	15.98		2.75		4.17	.71	1.10	5.91	8.36	.58
SAMP SIZE	2	1	61	3	43	747	367	15	9	1,248
AV WEIGHT		1.60	2.23	1.21	2.80	2.28	2.60			2.39
STD ERROR						.04	.07			.03
SAMP SIZE	0	1	2	1	1	53	15	0	0	73
SEXES COMBINED										
NUMBER	1,012	506	118,332	3,007	66,550	1,448,895	582,523	22,185	14,322	2,257,332
AV LENGTH	534.00	463.00	530.30	485.56	581.04	537.48	588.69	541.03	584.06	551.85
STD ERROR	15.98		1.94		3.22	.51	.85	4.16	8.03	.42
SAMP SIZE	2	1	117	3	66	1,481	712	31	16	2,429
AV WEIGHT		1.60	2.45	1.21	2.98	2.46	2.98			2.61
STD ERROR			.11		.41	.03	.06			.03
SAMP SIZE	0	1	4	1	4	106	31	0	0	147

Table 28. Egegik River daily sockeye salmon escapement counts, 1979.

DATE	DAILY COUNT	ACCUMULATIVE COUNT	DAILY PERCENT OF TOTAL	ACCUMULATIVE PERCENT
JUNE 18	0	0	0.	0.
19	48	48	0.01	0.01
20	1,338	1,386	0.14	0.15
21	0	1,386	0.	0.15
22	48	1,434	0.01	0.16
23	138	1,572	0.01	0.17
24	16,338	17,910	1.77	1.94
25	133,716	151,626	14.45	16.39
26	98,424	250,050	10.64	27.03
27	106,122	356,172	11.47	38.50
28	133,692	489,864	14.45	52.95
29	45,894	535,758	4.96	57.91
30	14,550	550,308	1.57	59.48
JULY 1	55,596	605,904	6.01	65.49
2	89,046	694,950	9.62	75.11
3	17,088	712,038	1.85	76.96
4	30,624	742,662	3.31	80.27
5	33,972	776,634	3.67	83.94
6	56,202	832,836	6.07	90.01
7	40,512	873,348	4.38	94.39
8	12,330	885,678	1.33	95.72
9	6,870	892,548	0.74	96.46
10	3,648	896,196	0.39	96.85
11	8,838	905,034	0.95	97.80
12	7,092	912,126	0.77	98.57
13	5,244	917,370	0.57	99.14
14	4,050	921,420	0.44	99.58
15	2,244	923,664	0.24	99.82
16	1,698	925,362	0.18	100.00

Table 29. Egegik River escapement of sockeye salmon by sex and sample period, 1979.

PERIOD NUMBER	DATE	NO. OF FISH SAMPLED	COUNT		PERCENT		ESCAPEMENT	NUMBER IN ESCAPEMENT	
			MALES	FEMALES	MALES	FEMALES		MALES	FEMALES
1	06/18-06/28	570	301	269	52.81	47.19	189,714	100,182	89,532
2	06/29-07/05	689	320	369	46.44	53.56	609,030	282,859	326,171
3	07/06-07/17	657	284	373	43.23	56.77	233,298	100,847	132,451
TOTAL		1,916	905	1,011	46.89	53.11	1,032,042	483,888	548,154

Table 30. Egegik River escapement of sockeye salmon by age group, sex, and sample period, 1979.

SAMPLE PERIOD	DATE		AGE GROUP								TOTAL
			42	43	52	53	63	64	74	84	
MALES											
1	06/18-06/28	COUNT	1,664	666	4,327	66,233	25,295	999	998	--	100,182
		PERCENT	1.66	.66	4.32	66.11	25.25	1.00	1.00	--	20.70
2	06/29-07/05	COUNT	10,607	3,536	8,839	199,769	55,688	3,536	884	--	282,859
		PERCENT	3.75	1.25	3.13	70.63	19.69	1.25	.31	--	58.46
3	07/06-07/17	COUNT	1,776	1,420	2,841	62,142	31,603	1,065	--	--	100,847
		PERCENT	1.76	1.41	2.82	61.62	31.34	1.06	--	--	20.84
COLUMN TOTALS		COUNT	14,047	5,622	16,007	328,144	112,586	5,600	1,882	--	483,888
		PERCENT	2.90	1.16	3.31	67.81	23.27	1.16	.39	--	100.00
FEMALES											
1	06/18-06/28	COUNT	2,663	--	2,663	57,247	25,295	666	998	--	89,532
		PERCENT	2.97	--	2.97	63.94	28.25	.74	1.12	--	16.33
2	06/29-07/05	COUNT	6,187	--	9,723	238,662	65,411	6,188	--	--	326,171
		PERCENT	1.90	--	2.98	73.17	20.05	1.90	--	--	59.51
3	07/06-07/17	COUNT	2,486	--	1,066	93,035	33,734	1,065	710	355	132,451
		PERCENT	1.88	--	.80	70.24	25.47	.80	.54	.27	24.16
COLUMN TOTALS		COUNT	11,336	--	13,452	388,944	124,440	7,919	1,708	355	548,154
		PERCENT	2.07	--	2.45	70.96	22.70	1.44	.31	.07	100.00
SEXES COMBINED											
1	06/18-06/28	COUNT	4,327	666	6,990	123,480	50,590	1,665	1,996	--	189,714
		PERCENT	2.28	.35	3.68	65.09	26.67	.88	1.05	--	18.38
2	06/29-07/05	COUNT	16,794	3,536	18,562	438,431	121,099	9,724	884	--	609,030
		PERCENT	2.76	.58	3.05	71.99	19.88	1.60	.14	--	59.01
3	07/06-07/17	COUNT	4,262	1,420	3,907	155,177	65,337	2,130	710	355	233,298
		PERCENT	1.83	.61	1.68	66.51	28.01	.91	.30	.15	22.61
COLUMN TOTALS		COUNT	25,383	5,622	29,459	717,088	237,026	13,519	3,590	355	1,032,042
		PERCENT	2.46	.55	2.85	69.48	22.97	1.31	.35	.03	100.00

Table 31. Egegik River escapement of sockeye salmon by age group and sex with length (mm), 1979.

	AGE GROUP								
	42	43	52	53	63	64	74	84	TOTAL
MALES									
NUMBER	14,047	5,622	16,007	328,144	112,586	5,600	1,882	0	483,888
AV LENGTH	530.55	394.30	595.88	541.31	599.45	553.63	607.37		555.02
STD ERROR	5.65	8.68	5.77	.91	1.96	6.57	9.53		.83
SAMP SIZE	22	10	31	600	228	10	4	0	905
FEMALES									
NUMBER	11,336	0	13,452	388,944	124,440	7,919	1,708	355	548,154
AV LENGTH	519.45		581.79	523.19	581.96	520.26	573.62	591.00	538.05
STD ERROR	5.30		5.01	.83	1.33	7.77	8.03		.69
SAMP SIZE	22	0	22	704	245	12	5	1	1,011
SEXES COMBINED									
NUMBER	25,383	5,622	29,459	717,088	237,026	13,519	3,590	355	032,042
AV LENGTH	525.59	394.30	589.45	531.48	590.27	534.08	591.31	591.00	546.01
STD ERROR	3.87	8.68	3.96	.61	1.17	5.18	6.15		.53
SAMP SIZE	44	10	53	1,304	473	22	9	1	1,916

UGASHIK DISTRICT

The forecasted sockeye run to the Ugashik District was 983,000 in 1979, and consisted of an escapement goal of 500,000 and an estimated harvest of 483,000. It was only the second year since 1971 that any harvest at all had been forecast for the District. The run was expected to be about evenly distributed between the 4_2 age class returning from an escapement in 1975 of 429,000 and the 5_3 age class from an escapement in 1974 of 62,000. Catch and escapement data for the Ugashik District are presented in Tables 32 through 40. The sockeye salmon run totaled 2,092,002 with a harvest of 391,118 and escapement of 1,700,904. As predicted, the run was largely composed of 4_2 and 5_3 age classes. The sockeye catch was the largest catch since 1971 and the escapement was the second largest in history.

Processor capability was extremely limited in this District, and during the majority of the sockeye run only two companies operated. One company had a maximum capacity of 7,000 to 10,000 fish per day and the second company took 30,000 to 35,000 per day. Six additional operators moved into the area during or after the week of July 15.

A total of 777 usable samples was collected from the commercial catch for age, length, weight, and sex determinations. Most of the catch was composed of age 4_2 and 5_3 (49% and 40% respectively) sockeye from the 1975 and 1974 brood year. Average length and weight is estimated to be 546 mm and 2.48 kg, respectively. A total of 2,143 usable samples were collected from the escapement. Estimated average length from the escapement was 537 mm. The male to female sex ratio was 1.0 : 0.8 for the catch, 1.0 : 0.7 for the escapement, and 1.0 : 0.7 for the total run.

The chinook salmon catch of 10,000 in the Ugashik District was nearly 4 times the 20-year average and marks the second consecutive year that effort and catch have increased. The chum salmon catch totaled 12,000 fish and the coho catch of 18,000 was nearly 9 times the 20-year average.

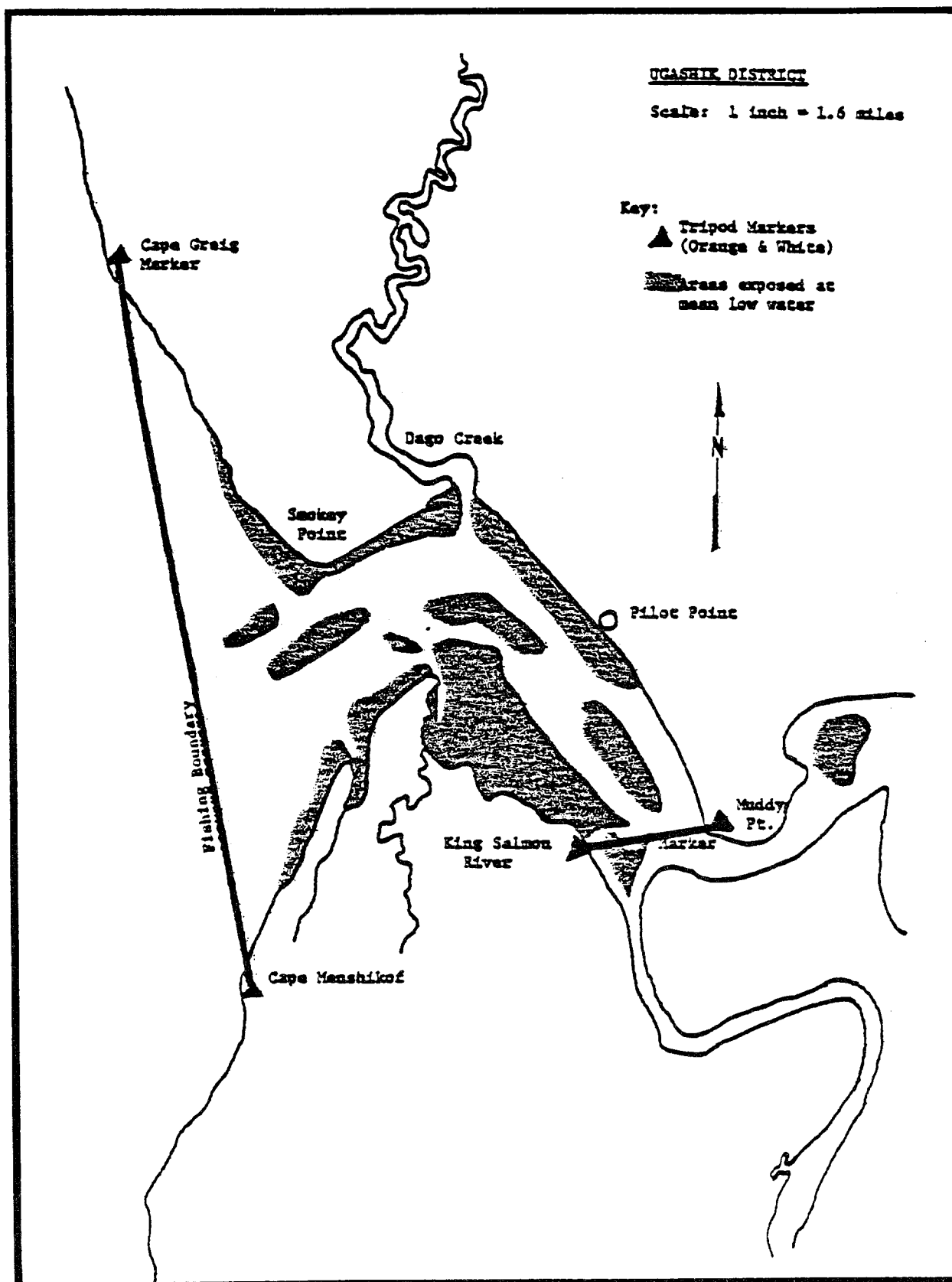


Figure 4. Ugashik District commercial fishing boundaries, 1979.

Table 32. Ugashik District commercial salmon catch by species and fishing effort by gear type by period, 1979.

Period		Effort		Number of Fish					Total
		Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	
5/28-6/2	5 days				1,112				1,112
6/ 4- 9	5 days				3,511				3,511
6/11-16	5 days	55	10	289	3,658				3,947
6/18-23	5 days	26	11	5,626	1,164	9			6,799
6/26-27	12 hours	8	10	12,422	26	34			12,482
6/29-30	12 hours	10	9	16,860	10	54			16,924
7/ 5	12 hours	16	14	37,027	8	110			37,145
7/10-14	96½ hours ¹	39	13	107,801	23	4,218			112,042
7/15-21	7 days	87	14	195,892	53	7,101			203,046
7/22-28	153 hours	21	7	12,434		597	2	208	13,241
7/30-8/4	5 days	2	8	2,541	1	25	3	349	2,919
8/ 6-11	5 days	1	7	166	1	17	1	411	596
8/13-18	5 days	3	9	60	1	8	3	3,947	4,019
8/20-25	5 days					1		6,239	6,240
8/27-9/1	5 days							3,580	3,580
		19	19						
9/3- 8	5 days							2,296	2,296
9/10-15	5 days							856	856
Total				391,118	9,568	12,174	9	17,886	430,755
Percent of District Catch				90.8	2.2	2.8	+	4.2	100.0

¹ A 12-hour period followed by an announcement for continuous fishing until 9 a.m. July 21.

Table 33. Ugashik River catch and escapement of sockeye salmon by age group and sex, 1979.

	AGE GROUP							
	42	43	52	53	63	64	74	TOTAL
CATCH								
MALES								
NUMBER	114,768	0	5,537	80,036	18,625	1,510	503	220,979
PERCENT	29.34	0.00	1.42	20.46	4.76	.39	.13	56.50
FEMALES								
NUMBER	78,022	0	5,034	75,002	10,571	1,510	0	170,139
PERCENT	19.95	0.00	1.29	19.18	2.70	.39	0.00	43.50
SEXES COMBINED								
NUMBER	192,790	0	10,571	155,038	29,196	3,020	503	391,118
PERCENT	49.29	0.00	2.70	39.64	7.46	.77	.13	100.00
ESCAPEMENT								
MALES								
NUMBER	792,026	4,419	1,807	217,396	8,468	703	2,527	1,027,346
PERCENT	46.57	.26	.11	12.78	.50	.04	.15	60.40
FEMALES								
NUMBER	443,172	0	1,607	222,521	5,355	903	0	673,558
PERCENT	26.06	0.00	.09	13.08	.31	.05	0.00	39.60
SEXES COMBINED								
NUMBER	1,235,198	4,419	3,414	439,917	13,823	1,606	2,527	1,700,904
PERCENT	72.62	.26	.20	25.86	.81	.09	.15	100.00
CATCH AND ESCAPEMENT								
MALES								
NUMBER	906,794	4,419	7,344	297,432	27,093	2,213	3,030	1,248,325
PERCENT	43.35	.21	.35	14.22	1.30	.11	.14	59.67
FEMALES								
NUMBER	521,194	0	6,641	297,523	15,926	2,413	0	843,697
PERCENT	24.91	0.00	.32	14.22	.76	.12	0.00	40.33
SEXES COMBINED								
NUMBER	1,427,988	4,419	13,985	594,955	43,019	4,626	3,030	2,092,022
PERCENT	68.26	.21	.67	28.44	2.06	.22	.14	100.00

Table 34. Ugashik District commercial catch of sockeye salmon by sex and sample period, 1979.

PERIOD NUMBER	DATE	NO. OF FISH SAMPLED	COUNT		PERCENT		CATCH	NUMBER IN CATCH	
			MALES	FEMALES	MALES	FEMALES		MALES	FEMALES
1	06/11-08/21	777	439	338	56.50	43.50	391,118	220,979	170,139

Table 35. Ugashik District commercial catch of sockeye salmon by age group, sex, and sample period, 1979.

			AGE GROUP						
SAMPLE PERIOD	DATE		42	52	53	63	64	74	TOTAL
MALES									
1	06/11-	COUNT	114,768	5,537	80,036	18,625	1,510	503	220,979
	08/21	PERCENT	51.94	2.51	36.22	8.43	.68	.23	100.00
FEMALES									
1	06/11-	COUNT	78,022	5,034	75,002	10,571	1,510	--	170,139
	08/21	PERCENT	45.86	2.96	44.08	6.21	.89	--	100.00
SEXES COMBINED									
1	06/11-	COUNT	192,790	10,571	155,038	29,196	3,020	503	391,118
	08/21	PERCENT	49.29	2.70	39.64	7.47	.77	.13	100.00

Table 36. Ugashik District commercial catch of sockeye salmon by age group and sex with length (mm) and weight (kg), 1979.

	AGE GROUP						
	42	52	53	63	64	74	TOTAL
MALES							
NUMBER	114,768	5,537	80,036	18,625	1,510	503	220,979
AV LENGTH	544.20	598.50	551.20	596.10	562.30	622.00	552.77
STD ERROR	1.24	7.78	1.53	4.88	2.66		.96
SAMP SIZE	228	11	159	37	3	1	439
AV WEIGHT	2.51	3.49	2.62	3.38	2.75	3.38	2.65
STD ERROR	.02	.18	.03	.08	.11		.02
SAMP SIZE	228	11	159	37	3	1	439
FEMALES							
NUMBER	78,022	5,034	75,002	10,571	1,510	0	170,139
AV LENGTH	530.20	568.00	537.40	581.10	571.30		538.02
STD ERROR	1.24	5.44	1.40	4.41	1.21		.90
SAMP SIZE	155	10	149	21	3	0	338
AV WEIGHT	2.17	2.66	2.24	2.85	2.49		2.26
STD ERROR	.02	.09	.02	.07	.01		.01
SAMP SIZE	155	10	147	21	3	0	336
SEXES COMBINED							
NUMBER	192,790	10,571	155,038	29,196	3,020	503	391,118
AV LENGTH	538.53	583.98	544.52	590.67	566.80	622.00	546.35
STD ERROR	.89	4.83	1.04	3.50	1.46		.67
SAMP SIZE	383	21	308	58	6	1	777
AV WEIGHT	2.37	3.09	2.44	3.19	2.62	3.38	2.48
STD ERROR	.02	.10	.02	.06	.05		.01
SAMP SIZE	383	21	306	58	6	1	775

Table 37. Ugashik River daily sockeye salmon escapement counts, 1979.

DATE	DAILY COUNT	ACCUMULATIVE COUNT	DAILY PERCENT OF TOTAL	ACCUMULATIVE PERCENT
JULY 1	1,800	1,800	0.11	0.11
2	10,884	12,684	0.64	0.75
3	30,702	43,386	1.80	2.55
4	1,716	45,102	0.10	2.65
5	8,832	53,934	0.52	3.17
6	69,810	123,744	4.10	7.27
7	66,792	190,536	3.93	11.20
8	53,382	243,918	3.14	14.34
9	127,776	371,694	7.51	21.85
10	172,950	544,644	10.17	32.02
11	167,856	712,500	9.87	41.89
12	116,874	829,374	6.87	48.76
13	247,602	1,076,976	14.56	63.32
14	202,416	1,279,392	11.90	75.22
15	90,672	1,370,064	5.33	80.55
16	43,176	1,413,240	2.54	83.09
17	34,524	1,447,764	2.03	85.12
18	20,592	1,468,356	1.21	86.33
19	59,046	1,527,402	3.47	89.80
20	74,862	1,602,264	4.40	94.20
21	37,578	1,639,842	2.21	96.41
22	22,506	1,662,348	1.32	97.73
23	11,514	1,673,862	0.68	98.41
24	13,536	1,687,398	0.80	99.21
25	6,372	1,693,770	0.37	99.58
26	7,134	1,700,904	0.42	100.00

Table 38. Ugashik River escapement of sockeye salmon by sex and sample period, 1979.

PERIOD NUMBER	DATE	NO. OF FISH SAMPLED	COUNT		PERCENT		ESCAPEMENT	NUMBER IN ESCAPEMENT	
			MALES	FEMALES	MALES	FEMALES		MALES	FEMALES
1	07/01-07/08	694	418	276	60.23	39.77	243,918	146,913	97,005
2	07/09-07/12	648	388	260	59.88	40.12	585,456	350,551	234,905
3	07/13-07/26	801	487	314	60.80	39.20	871,530	529,882	341,648
TOTAL		2,143	1,293	850	60.40	39.60	1,700,904	1,027,346	673,558

Table 39. Ugashik River escapement of sockeye salmon by age group, sex, and sample period, 1979.

			AGE GROUP							
SAMPLE PERIOD	DATE		42	43	52	53	63	64	74	TOTAL
MALES										
1	07/01-07/08	COUNT	98,059	3,515	--	42,879	1,406	703	351	146,913
		PERCENT	66.75	2.39	--	29.19	.96	.48	.24	14.30
2	07/09-07/12	COUNT	262,010	904	1,807	83,120	2,710	--	--	350,551
		PERCENT	74.74	.26	.52	23.71	.77	--	--	34.12
3	07/13-07/26	COUNT	431,957	--	--	91,397	4,352	--	2,176	529,882
		PERCENT	81.52	--	--	17.25	.82	--	.41	51.58
COLUMN TOTALS		COUNT	792,026	4,419	1,807	217,396	8,468	703	2,527	1,027,346
		PERCENT	77.09	.43	.18	21.16	.82	.07	.25	100.00
FEMALES										
1	07/01-07/08	COUNT	51,666	--	703	42,176	2,460	--	--	97,005
		PERCENT	53.26	--	.72	43.48	2.54	--	--	14.40
2	07/09-07/12	COUNT	155,399	--	904	75,892	1,807	903	--	234,905
		PERCENT	66.15	--	.38	32.31	.77	.38	--	34.88
3	07/13-07/26	COUNT	236,107	--	--	104,453	1,088	--	--	341,648
		PERCENT	69.11	--	--	30.57	.32	--	--	50.72
COLUMN TOTALS		COUNT	443,172	--	1,607	222,521	5,355	903	--	673,558
		PERCENT	65.80	--	.24	33.04	.79	.13	--	100.00
SEXES COMBINED										
1	07/01-07/08	COUNT	149,725	3,515	703	85,055	3,866	703	351	243,918
		PERCENT	61.38	1.44	.29	34.87	1.59	.29	.14	14.34
2	07/09-07/12	COUNT	417,409	904	2,711	159,012	4,517	903	--	585,456
		PERCENT	71.30	.16	.46	27.16	.77	.15	--	34.42
3	07/13-07/26	COUNT	668,064	--	--	195,850	5,440	--	2,176	871,530
		PERCENT	76.65	--	--	22.47	.63	--	.25	51.24
COLUMN TOTALS		COUNT	1,235,198	4,419	3,414	439,917	13,823	1,606	2,527	1,700,904
		PERCENT	72.62	.26	.20	25.86	.81	.10	.15	100.00

Table 40. Ugashik River escapement of sockeye salmon by age group and sex with length (mm), 1979.

	AGE GROUP							
	42	43	52	53	63	64	74	TOTAL
MALES								
NUMBER	792,026	4,419	1,807	217,396	8,468	703	2,527	1,027,346
AV LENGTH	544.01	400.82	574.00	547.19	614.79	540.50	597.08	544.83
STD ERROR	.63	4.14	21.00	1.20	6.90	15.49	16.69	.55
SAMP SIZE	966	11	2	298	11	2	3	1,293
FEMALES								
NUMBER	443,172	0	1,607	222,521	5,355	903	0	673,558
AV LENGTH	521.73		571.97	528.45	586.63	516.00		524.58
STD ERROR	.86		5.00	1.24	6.26			.70
SAMP SIZE	536	0	3	300	10	1	0	850
SEXES COMBINED								
NUMBER	1,235,198	4,419	3,414	439,917	13,823	1,606	2,527	1,700,904
AV LENGTH	536.02	400.82	573.04	537.71	603.88	526.72	597.08	536.81
STD ERROR	.51	4.14	8.92	.86	4.68	10.32	16.69	.43
SAMP SIZE	1,502	11	5	598	21	3	3	2,143

NUSHAGAK DISTRICT

The large pre-season forecast of 4.4 million sockeye salmon in the Nushagak District indicated a probable harvest of 3.1 million fish after escapement requirements of 1.3 million had been met. Commercially significant runs of chinook, chum, pink, and coho salmon also return to Nushagak. The Nushagak District is the primary contributor to the Bristol Bay chinook salmon fishery, with over 70% of the commercial harvest occurring in this District. The sockeye salmon run totaled 6.4 million. The chinook harvest was over 157,000, the chum harvest exceeded 440,000, the coho harvest was nearly 130,000, and the pink harvest was less than 2,000. Odd-year pink runs are insignificant in the Bay. The actual catch and escapement data for the Nushagak District are presented in Tables 41 through 74.

Early fishing effort directed toward chinook stocks was noticeably increased over previous effort levels. For many years early season effort ranged from 200 to 500 drift units, while 1979 effort was in the range of 450 to 630 units. For sockeye salmon, actual peak effort of 503 drift units and 267 set units was recorded during the period. Unresolved price disputes between fishermen and major processors had minimal effect in the Nushagak District, as the local marketing association successfully concluded price negotiations by mid-June. In total, 26 different processors operated in Nushagak District, including the three long-established shore-based canneries, 14 frozen floater operations nine fresh export and five processors who transported salmon in brine out of the Nushagak District to be processed elsewhere.

Effective July 6, the Nushagak District was designated by a Commissioner's Announcement as a constructive port in which foreign processing could take place. However, no direct foreign processing occurred in the Nushagak District, and the announcement was rescinded on July 10 when the local domestic industry was again able to adequately process the daily harvest.

The early run timing (the run peaked on June 27-29) in 1979 into the Nushagak District, as well as the continuing strong sockeye run into the District, created significant industry processing problems. Many operators severely limited their fishermen by placing them on restrictive delivery limits and escapement goals were exceeded in all Nushagak District river systems except the Snake River. Overall, the Nushagak escapement of 3.1 million sockeye in 1979 was 110% larger than the 20-year average of 1.5 million. The total sockeye salmon harvest of 3.3 million was 209% higher than the 20-year average of 1.1 million and the largest since 3.5 million were caught in 1944.

A total of 6,975 usable samples were collected from the sockeye salmon run, with 3,792 taken from the commercial catch and 3,183 taken from the escapement to various contributing rivers. The commercial catch was composed primarily of age class 4₂ (45%) and 5₂ (41%) from the 1975 and 1974 brood years, respectively. The average sockeye salmon length and weight from the commercial catch was estimated to be 539 mm and 2.87 kg, respectively. The male to female sex ratio was estimated to be 1.0 : 0.96.

Mean lengths of sockeye in the escapement were estimated to be 540 mm for the Wood, 552 mm for the Igushik, 532 mm for the Nuyakuk, and 554 mm for the Snake

River. Age composition of the escapements to the various rivers was also estimated, with the Wood River escapement composed of 43% 4_2 and 46% 5_2 aged fish. The Igushik River escapement was composed of 41% 4_2 and 41% 5_2 aged fish, the Nuyakuk River escapement of 67% 4_2 and 39% 5_2 aged fish, and the Snake River of 55% 4_2 and 39% 5_2 aged fish.

The commercial harvest of chinook salmon in 1979 of 157,000 fish was the largest Nushagak District catch in the history of the fishery, well above the previous high of 128,000 in 1929. The District chinook escapement of 95,000 was the third largest ever recorded. The total chinook return was 252,000 fish, catch and escapement combined. A total of 810 chinook salmon were sampled from the commercial catch. The average length and weight were estimated to be 763 mm and 8.23 kg, respectively. The catch was comprised primarily of age 4_2 (36%), 5_2 (16%), and 6_2 (40%) age classes. The catch consisted of 71% males, mostly age 4_2 .

The chum salmon commercial catch of 440,000 was well above the long term average of 358,000, and with the chum escapement of 166,000, produced a total run of 606,000. A total of 837 usable samples were collected from the catch. The mean length and weight were estimated to be 576 mm and 3.0 kg, respectively. The catch was composed mostly of age classes 4_1 (63%) and 5_1 (30%) and had a male to female sex ratio of 1.0 : 1.8.

The coho salmon return to the Nushagak District was exceptionally strong and increased late season fishing effort was directed at Nushagak cohos in 1979. The commercial catch of 130,000 fish was far above the long term average of 21,000 and was the largest since 1922 when 160,000 cohos were caught in the Nushagak District.

A total of 403 usable samples were collected from the commercial harvest. The catch was composed of 85% age 4_3 coho. The average length of coho in the harvest was 562 mm. Males composed 57% of the catch and females 43%.

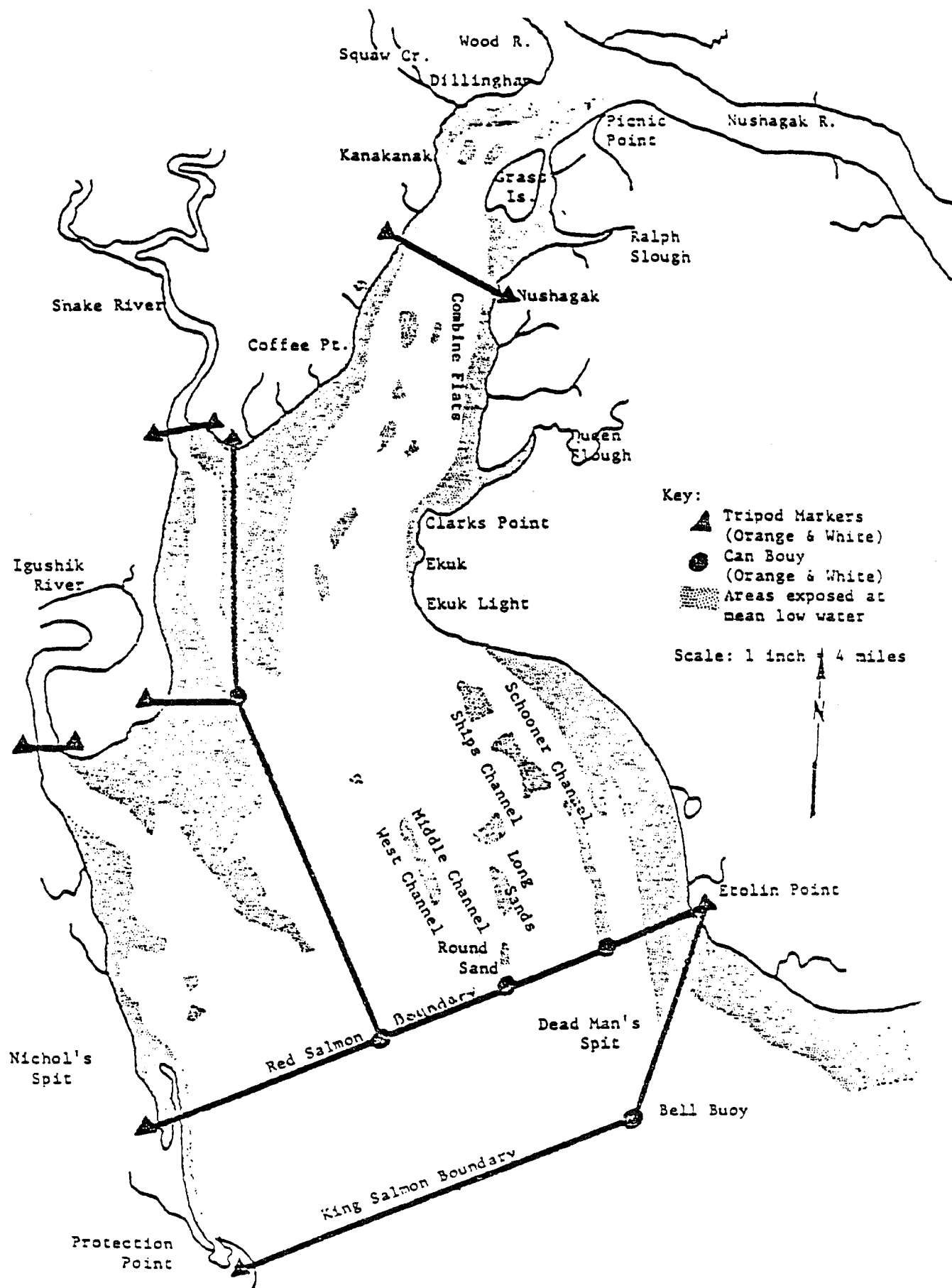


Figure 5. Nushagak-Igushik District commercial fishing boundaries, 1979.

Table 41. Nushagak-Igushik District commercial salmon catch by species and fishing effort by gear type by period, 1979.

Period	Time	Effort		Catch by Species					
		Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total
5/28-6/2	5 days	169	4	1	11,744	53			11,798
6/ 4-9	5 days	453	6	6	13,478	3			13,487
6/11-15	4 days	632	33	744	58,648	553			59,945
6/19-20	24 hours	455	127	18,407	34,412	17,339		2	70,160
6/21	12 hours	362	93	11,973	3,245	4,354	6	2	19,580
6/23	12 hours	369	112	65,893	12,872	24,083	7	3	102,858
6/25-26	24 hours ¹	382	154	148,538	3,681	20,090	3	10	172,322
6/27-30	3 days	495	228	1,070,172	8,905	66,161	47	15	1,145,300
7/ 1- 4	4 days	503	267	628,275	4,465	73,723	38	53	706,554
7/ 5- 7	3 days	332	197	414,719	1,478	40,850	14	1	457,062
7/ 8-10	3 days	291	205	369,064	559	39,589	67	31	409,310
7/11-15	5 days	371	262	468,170	1,625	76,736	1,524	261	548,316
7/16-21	5½ days	336	189	111,463	1,465	54,345	52	3,452	170,777
7/23-28	5 days	181	104	15,648	275	13,541	13	32,991	62,468
7/29-8/4	5 days	138	72	3,806	159	7,759	13	31,693	43,430
8/ 6-11	5 days	101	60	431	48	991	3	51,409	52,882
8/13-18	5 days	73	27	36	262	109		9,684	10,091
Totals				3,327,346	157,321	440,279	1,787	129,607	4,056,340
Percent of District Catch				82.0	3.9	10.9	+	3.2	100.0

¹ Second 12 hours of this period was open to Igushik section only.

Table 42. Nushagak-Igushik District inshore return of sockeye salmon by age group and sex, 1979.

	AGE GROUP									TOTAL
	31	32	41	42	52	53	62	63	64	
MALES										
ESCAPEMENT	484	41	7,938	605,510	587,392	135,994	1,860	16,423	--	1,355,642
CATCH	2,100	--	5,008	820,895	642,719	212,762	--	15,416	--	1,698,900
TOTAL	2,584	41	12,946	1,426,405	1,230,111	348,756	1,860	31,839	--	3,054,542
PERCENT	.09	--	.42	46.70	40.27	11.42	.06	1.04	--	47.73
FEMALES										
ESCAPEMENT	484	481	7,939	733,988	752,612	196,920	1,860	22,845	--	1,717,129
CATCH	--	--	7,889	674,976	698,000	212,106	5,202	29,906	367	1,628,446
TOTAL	484	481	15,828	1,408,964	1,450,612	409,026	7,062	52,751	367	3,345,575
PERCENT	.02	.01	.47	42.11	43.36	12.23	.21	1.58	.01	52.27
SEXES COMBINED										
ESCAPEMENT	968	522	15,877	1,339,498	1,340,004	332,914	3,720	39,268	--	3,072,771
CATCH	2,100	--	12,897	1,495,871	1,340,719	424,868	5,202	45,322	367	3,327,346
TOTAL	3,068	522	28,774	2,835,369	2,680,723	757,782	8,922	84,590	367	6,400,117
PERCENT	.05	.01	.45	44.30	41.88	11.84	.14	1.32	.01	100.00

Table 43. Nushagak Section commercial catch of sockeye salmon by sex and sample period, 1979.

PERIOD NUMBER	DATE	NO. OF FISH SAMPLED	COUNT		PERCENT		CATCH	NUMBER IN CATCH	
			MALES	FEMALES	MALES	FEMALES		MALES	FEMALES
1	05/29-06/26	572	272	300	47.55	52.45	209,822	99,775	110,047
2	06/27-06/30	603	287	316	47.60	52.40	1,045,240	497,486	547,754
3	07/01-07/04	555	316	239	56.94	43.06	595,923	339,300	256,623
4	07/05-07/08	477	261	216	54.72	45.28	413,870	226,457	187,413
5	07/09-08/11	460	230	230	50.00	50.00	877,619	438,810	438,809
TOTAL		2,667	1,366	1,301	50.97	49.03	3,142,474	1,601,828	1,540,646

Table 44. Nushagak Section commercial catch of sockeye salmon by age group, sex, and sample period, 1979.

			AGE GROUP								
SAMPLE PERIOD	DATE		31	41	42	52	53	62	63	64	TOTAL
MALES											
1	05/29-06/26	COUNT	367	2,201	24,577	57,958	11,371	—	3,301	—	99,775
		PERCENT	.37	2.21	24.63	58.09	11.40	—	3.31	—	6.23
2	06/27-06/30	COUNT	1,733	1,733	240,943	175,074	69,336	—	8,667	—	497,486
		PERCENT	.35	.35	48.43	35.19	13.94	—	1.74	—	31.06
3	07/01-07/04	COUNT	—	1,074	176,092	118,111	44,023	—	—	—	339,300
		PERCENT	—	.32	51.90	34.81	12.97	—	—	—	21.18
4	07/05-07/08	COUNT	—	—	123,206	73,750	28,633	—	868	—	226,457
		PERCENT	—	—	54.41	32.57	12.64	—	.38	—	14.14
5	07/09-08/11	COUNT	—	—	215,589	179,340	41,973	—	1,908	—	438,810
		PERCENT	—	—	49.13	40.87	9.57	—	.43	—	27.39
COLUMN TOTALS		COUNT	2,100	5,008	780,407	604,233	195,336	—	14,744	—	1,601,828
		PERCENT	.13	.31	48.72	37.72	12.20	—	.92	—	100.00
FEMALES											
1	05/29-06/26	COUNT	—	2,935	22,009	65,661	15,040	—	4,035	367	110,047
		PERCENT	—	2.67	20.00	59.67	13.67	—	3.67	.33	7.14
2	06/27-06/30	COUNT	—	1,733	159,473	289,477	72,803	3,467	20,801	—	547,754
		PERCENT	—	.32	29.11	52.85	13.29	.63	3.80	—	35.55
3	07/01-07/04	COUNT	—	3,221	124,554	102,005	26,843	—	—	—	256,623
		PERCENT	—	1.26	48.54	39.75	10.46	—	—	—	16.66
4	07/05-07/08	COUNT	—	—	86,765	76,354	22,559	1,735	—	—	187,413
		PERCENT	—	—	46.30	40.74	12.04	.93	—	—	12.17
5	07/09-08/11	COUNT	—	—	246,115	135,458	53,420	—	3,816	—	438,809
		PERCENT	—	—	56.09	30.87	12.17	—	.87	—	28.48
COLUMN TOTALS		COUNT	—	7,889	638,916	668,955	190,665	5,202	28,652	367	1,540,646
		PERCENT	—	.51	41.47	43.42	12.38	.34	1.86	.02	100.00
SEXES COMBINED											
1	05/29-06/26	COUNT	367	5,136	46,586	123,619	26,411	—	7,336	367	209,822
		PERCENT	.17	2.45	22.20	58.92	12.59	—	3.50	.17	6.68
2	06/27-06/30	COUNT	1,733	3,466	400,416	464,551	142,139	3,467	29,468	—	1,045,240
		PERCENT	.17	.33	38.31	44.44	13.60	.33	2.82	—	33.26
3	07/01-07/04	COUNT	—	4,295	300,646	220,116	70,866	—	—	—	595,923
		PERCENT	—	.72	50.45	36.94	11.89	—	—	—	18.96
4	07/05-07/08	COUNT	—	—	209,971	150,104	51,192	1,735	868	—	413,870
		PERCENT	—	—	50.73	36.27	12.37	.42	.21	—	13.17
5	07/09-08/11	COUNT	—	—	461,704	314,798	95,393	—	5,724	—	877,619
		PERCENT	—	—	52.61	35.87	10.87	—	.65	—	27.93
COLUMN TOTALS		COUNT	2,100	12,897	1,419,323	1,273,188	386,001	5,202	43,396	367	3,142,474
		PERCENT	.07	.41	45.17	40.51	12.28	.17	1.38	.01	100.00

Table 45. Nushagak Section commercial catch of sockeye salmon by age group and sex with length (mm) and weight (kg), 1979.

	31	41	42	AGE GROUP 52	53	62	63	64	TOTAL
MALES									
NUMBER	2,100	5,008	780,407	604,233	195,336	0	14,744	0	1,601,828
AV LENGTH	526.36	573.45	521.18	581.10	540.80		587.16		546.96
STD ERROR		6.03	.87	1.04	1.71		4.76		.62
SAMP SIZE	2	8	625	548	167	0	16	0	1,366
AV WEIGHT	2.63	4.31	2.61	3.75	2.91		4.40		3.09
STD ERROR			.04	.05	.06				.03
SAMP SIZE	1	1	96	134	33	0	1	0	266
FEMALES									
NUMBER	0	7,889	638,916	668,955	190,665	5,202	28,652	367	1,540,646
AV LENGTH		555.43	506.43	555.56	520.74	573.34	560.91	545.00	531.03
STD ERROR		5.70	.82	.86	1.65	7.31	4.38		.55
SAMP SIZE	0	12	497	600	162	4	25	1	1,301
AV WEIGHT		2.97	2.31	3.03	2.40	3.43	2.99		2.65
STD ERROR		.11	.03	.03	.05	.29	.18		.02
SAMP SIZE	0	4	97	125	32	3	7	0	268
SEXES COMBINED									
NUMBER	2,100	12,897	1,419,323	1,273,188	386,001	5,202	43,396	367	3,142,474
AV LENGTH	526.36	562.43	514.54	567.68	530.89	573.34	569.83	545.00	539.15
STD ERROR		4.18	.61	.67	1.19	7.31	3.25		.42
SAMP SIZE	2	20	1,122	1,148	329	4	41	1	2,667
AV WEIGHT	2.63	3.26	2.47	3.37	2.66	3.43	3.14		2.87
STD ERROR		.09	.02	.03	.04	.29	.16		.02
SAMP SIZE	1	5	193	259	65	3	8	0	534

Table 46. Igushik Section commercial catch of sockeye salmon by sex and sample period, 1979. (NOTE 1)

PERIOD NUMBER	DATE	NO. OF FISH SAMPLED	COUNT		PERCENT		CATCH	NUMBER IN CATCH	
			MALES	FEMALES	MALES	FEMALES		MALES	FEMALES
1	6/19- 6/30	594	300	294	50.51	49.49	60,602	30,607	29,995
2	7/ 1- 7/17	531	284	247	53.48	46.52	124,270	66,465	57,805
TOTAL		1,125	584	541	51.91	48.09	184,872	97,072	87,800

NOTE 1: SAMPLES FROM IGUSHIK BEACH.

Table 47. Igushik Section commercial catch of sockeye salmon by age group, sex, and sample period, 1979. (NOTE 1)

SAMPLE			AGE GROUP				
PERIOD	DATE		42	52	53	63	TOTAL
MALES							
1	6/19-	COUNT	7,958	19,997	2,448	204	30,607
	6/30	PERCENT	8.20	20.60	2.52	.21	31.53
2	7/ 1-	COUNT	32,530	18,489	14,978	468	66,465
	7/17	PERCENT	33.51	19.05	15.43	.48	68.47
COLUMN TOTALS		COUNT	40,488	38,486	17,426	672	97,072
		PERCENT	41.71	39.65	17.95	.69	100.00
FEMALES							
1	6/19-	COUNT	7,040	17,344	4,591	1,020	29,995
	6/30	PERCENT	8.02	19.75	5.23	1.16	34.16
2	7/ 1-	COUNT	29,020	11,701	16,850	234	57,805
	7/17	PERCENT	33.05	13.33	19.19	.27	65.84
COLUMN TOTALS		COUNT	36,060	29,045	21,441	1,254	87,800
		PERCENT	41.07	33.08	24.42	1.43	100.00
SEXES COMBINED							
1	6/19-	COUNT	14,998	37,341	7,039	1,224	60,602
	6/30	PERCENT	8.11	20.20	3.81	.66	32.78
2	7/ 1-	COUNT	61,550	30,190	31,828	702	124,270
	7/17	PERCENT	33.29	16.33	17.22	.38	67.22
COLUMN TOTALS		COUNT	76,548	67,531	38,867	1,926	184,872
		PERCENT	41.41	36.53	21.02	1.04	100.00

NOTE 1: SAMPLES FROM IGUSHIK BEACH.

Table 48. Igushik Section commercial catch of sockeye salmon by age group and sex with length (mm) and weight (kg), 1979. (NOTE 1)

	AGE GROUP				
	42	52	53	63	TOTAL
MALES					
NUMBER	40,488	38,486	17,426	672	97,072
AV LENGTH	528.77	594.18	550.11	595.50	558.99
STD ERROR	1.42	1.47	1.85	9.84	.92
SAMP SIZE	217	275	88	4	584
AV WEIGHT	2.79	3.91	3.23	3.36	3.32
STD ERROR	.05	.06	.06	0.00	.04
SAMP SIZE	52	76	20	1	149
FEMALES					
NUMBER	36,060	29,045	21,441	1,254	87,800
AV LENGTH	511.42	567.42	524.48	573.46	534.02
STD ERROR	1.28	1.33	1.44	5.43	.78
SAMP SIZE	193	220	117	11	541
AV WEIGHT	2.40	3.20	2.57	3.04	2.71
STD ERROR	.05	.06	.04	.14	.03
SAMP SIZE	48	52	34	3	137
SEXES COMBINED					
NUMBER	76,548	67,531	38,867	1,926	184,872
AV LENGTH	520.60	582.67	535.97	581.15	547.13
STD ERROR	.96	1.01	1.14	4.77	.61
SAMP SIZE	410	495	205	15	1,125
AV WEIGHT	2.60	3.61	2.87	3.14	3.03
STD ERROR	.04	.04	.04	.10	.02
SAMP SIZE	100	128	54	4	286

NOTE 1: SAMPLES FROM IGUSHIK BEACH.

Table 49. Nushagak-Igushik District commercial catch of chinook salmon by sex and sample period, 1979.

PERIOD NUMBER	DATE	NO. OF FISH SAMPLED	COUNT		PERCENT		CATCH	NUMBER IN CATCH	
			MALES	FEMALES	MALES	FEMALES		MALES	FEMALES
1	6/ 5- 6/18	417	234	183	56.12	43.88	83,870	47,064	36,806
2	6/29- 6/26	393	348	45	88.55	11.45	73,451	65,041	8,410
TOTAL		810	582	228	71.85	28.15	157,321	112,105	45,216

Table 50. Nushagak-Igushik District commercial catch of chinook salmon by age group, sex, and sample period, 1979.

		AGE GROUP								
SAMPLE PERIOD	DATE		32	42	52	53	62	72	73	TOTAL
MALES										
1	6/ 5- 6/18	COUNT	201	5,430	13,073	0	26,348	805	1,207	47,064
		PERCENT	.18	4.84	11.66	0.00	23.50	.72	1.08	41.98
2	6/29- 6/26	COUNT	748	51,584	7,476	1,308	3,364	187	374	65,041
		PERCENT	.67	46.01	6.67	1.17	3.00	.17	.33	58.02
COLUMN TOTALS		COUNT	949	57,014	20,549	1,308	29,712	992	1,581	112,105
		PERCENT	.85	50.86	18.33	1.17	26.50	.88	1.41	100.00
FEMALES										
1	6/ 5- 6/18	COUNT	0	0	3,218	0	29,163	2,816	1,609	36,806
		PERCENT	0.00	0.00	7.12	0.00	64.50	6.23	3.56	81.40
2	6/29- 6/26	COUNT	0	374	1,495	0	4,672	561	1,308	8,410
		PERCENT	0.00	.83	3.31	0.00	10.33	1.24	2.89	18.60
COLUMN TOTALS		COUNT	0	374	4,713	0	33,835	3,377	2,917	45,216
		PERCENT	0.00	.83	10.42	0.00	74.83	7.47	6.45	100.00
SEXES COMBINED										
1	6/ 5- 6/18	COUNT	201	5,430	16,291	0	55,511	3,621	2,816	83,870
		PERCENT	.13	3.45	10.36	0.00	35.29	2.30	1.79	53.31
2	6/29- 6/26	COUNT	748	51,958	8,971	1,308	8,036	748	1,682	73,451
		PERCENT	.48	33.03	5.70	.83	5.11	.48	1.07	46.69
COLUMN TOTALS		COUNT	949	57,388	25,262	1,308	63,547	4,369	4,498	157,321
		PERCENT	.60	36.48	16.06	.83	40.39	2.78	2.86	100.00

Table 51. Nushagak-Igushik District commercial catch of chinook salmon by age group and sex with length (mm) and weight (kg), 1979.

AGE GROUP								
	32	42	52	53	62	72	73	TOTAL
MALES								
NUMBER	949	57,014	20,549	1,308	29,712	992	1,581	112,105
AV LENGTH	445.42	586.40	777.21	593.71	925.96	1087.45	989.71	720.38
STD ERROR	10.63	2.93	7.13	17.90	6.58	27.28	28.08	2.66
SAMP SIZE	5	303	105	7	149	5	8	582
AV WEIGHT	1.81	3.80	7.08	2.72	12.06	20.75		6.74
STD ERROR	.23	.30	.43		.48	4.19		.22
SAMP SIZE	2	75	31	1	41	2	0	152
FEMALES								
NUMBER	0	374	4,713	0	33,835	3,377	2,917	45,216
AV LENGTH		716.50	803.70		872.34	948.35	877.79	869.93
STD ERROR		98.50	11.34		3.05	11.62	12.58	2.96
SAMP SIZE	0	2	24	0	170	17	15	228
AV WEIGHT			9.11		12.08	14.58	12.06	11.92
STD ERROR			1.21		.23	1.06	.94	.23
SAMP SIZE	0	0	5	0	50	3	5	63
SEXES COMBINED								
NUMBER	949	57,388	25,262	1,308	63,547	4,369	4,498	157,321
AV LENGTH	445.42	587.24	782.15	593.71	897.41	979.94	917.13	763.37
STD ERROR	10.63	2.98	6.18	17.90	3.48	10.91	12.76	2.09
SAMP SIZE	5	305	129	7	319	22	23	810
AV WEIGHT	1.81	3.80	7.46	2.72	12.07	15.95	12.06	8.23
STD ERROR	.23	.30	.41		.25	1.79	.94	.17
SAMP SIZE	2	75	36	1	91	5	5	215

Table 52. Nushagak-Igushik District commercial catch of coho salmon by sex and sample period, 1979.

PERIOD NUMBER	DATE	NO. OF FISH SAMPLED	COUNT		PERCENT		CATCH	NUMBER IN CATCH	
			MALES	FEMALES	MALES	FEMALES		MALES	FEMALES
1	6/19- 8/18	403	231	172	57.32	42.68	129,607	74,291	55,316

Table 53. Nushagak-Igushik District commercial catch of coho salmon by age group, sex, and sample period, 1979.

			AGE GROUP			
SAMPLE						
PERIOD	DATE		32	43	54	TOTAL
MALES						
1	6/19-	COUNT	4,502	64,643	5,146	74,291
	8/18	PERCENT	6.06	87.01	6.93	100.00
FEMALES						
1	6/19-	COUNT	3,538	45,989	5,789	55,316
	8/18	PERCENT	6.40	83.14	10.47	100.00
SEXES COMBINED						
1	6/19-	COUNT	8,040	110,632	10,935	129,607
	8/18	PERCENT	6.20	85.36	8.44	100.00

Table 54. Nushagak-Igushik District commercial catch of coho salmon by age group and sex with length (mm), 1979.

	AGE GROUP			
	32	43	54	TOTAL
MALES				
NUMBER	4,502	64,643	5,146	74,291
AV LENGTH	560.07	557.05	544.50	556.36
STD ERROR	8.21	3.38	8.37	3.04
SAMP SIZE	14	201	16	231
FEMALES				
NUMBER	3,538	45,989	5,789	55,316
AV LENGTH	547.91	570.38	567.94	568.69
STD ERROR	22.60	3.52	11.70	3.49
SAMP SIZE	11	143	18	172
SEXES COMBINED				
NUMBER	8,040	110,632	10,935	129,607
AV LENGTH	554.72	562.59	556.91	561.62
STD ERROR	10.96	2.46	7.34	2.29
SAMP SIZE	25	344	34	403

Table 55. Nushagak-Igushik District commercial catch of chum salmon by sex and sample period, 1979.

PERIOD NUMBER	DATE	NO. OF FISH SAMPLED	COUNT		PERCENT		CATCH	NUMBER IN CATCH	
			MALES	FEMALES	MALES	FEMALES		MALES	FEMALES
1	5/28- 8/18	837	297	540	35.48	64.52	440,279	156,228	284,051

Table 56. Nushagak-Igushik District commercial catch of chum salmon by age group, sex, and sample period, 1979.

SAMPLE		AGE GROUP					
PERIOD	DATE		31	41	51	61	TOTAL
MALES							
1	5/28- 8/18	COUNT PERCENT	13,151 8.42	95,735 61.28	46,290 29.63	1,052 .67	156,228 100.00
FEMALES							
1	5/28- 8/18	COUNT PERCENT	16,307 5.74	180,951 63.70	85,215 30.00	1,578 .56	284,051 100.00
SEXES COMBINED							
1	5/28- 8/18	COUNT PERCENT	29,458 6.69	276,686 62.84	131,505 29.87	2,630 .60	440,279 100.00

Table 57. Nushagak-Igushik District commercial catch of chum salmon by age group and sex with length (mm) and weight (kg), 1979.

	AGE GROUP				
	31	41	51	61	TOTAL
MALES					
NUMBER	13,151	95,735	46,290	1,052	156,228
AV LENGTH	539.64	584.99	618.23	661.00	591.53
STD ERROR	4.52	2.17	3.74	14.00	1.77
SAMP SIZE	25	182	88	2	297
AV WEIGHT	2.68	3.42	3.58		3.41
STD ERROR	.24	.07	.20		.07
SAMP SIZE	6	29	10	0	45
FEMALES					
NUMBER	16,307	180,951	85,215	1,578	284,051
AV LENGTH	526.39	559.62	588.99	633.00	566.93
STD ERROR	4.60	1.37	2.99	10.41	1.28
SAMP SIZE	31	344	162	3	540
AV WEIGHT	2.04	2.67	3.19	4.08	2.80
STD ERROR	.13	.06	.07		.04
SAMP SIZE	3	53	40	1	97
SEXES COMBINED					
NUMBER	29,458	276,686	131,505	2,630	440,279
AV LENGTH	532.31	568.40	599.28	644.20	575.66
STD ERROR	3.25	1.17	2.34	8.39	1.04
SAMP SIZE	56	526	250	5	837
AV WEIGHT	2.33	2.93	3.33	4.08	3.01
STD ERROR	.16	.04	.07		.04
SAMP SIZE	9	82	50	1	142

Table 58. Wood River apportioned catch and escapement of sockeye salmon by age group and sex, 1979.

	AGE GROUP					TOTAL
	42	52	53	63	64	
CATCH						
MALES						
NUMBER	445,372	336,200	111,863	3,628	--	897,063
PERCENT	49.65	37.48	12.47	.40	--	48.83
FEMALES						
NUMBER	366,080	444,471	116,563	12,647	367	940,128
PERCENT	38.94	47.28	12.40	1.34	.04	51.17
SEXES COMBINED						
NUMBER	811,452	780,671	228,426	16,275	367	1,837,191
PERCENT	44.17	42.49	12.43	.89	.02	100.00
ESCAPEMENT						
MALES						
NUMBER	328,516	307,259	71,501	3,865	--	711,141
PERCENT	46.20	43.21	10.05	.54	--	41.68
FEMALES						
NUMBER	398,085	479,247	108,217	9,662	--	995,211
PERCENT	40.00	48.16	10.87	.97	--	58.32
SEXES COMBINED						
NUMBER	726,601	786,506	179,718	13,527	--	1,706,352
PERCENT	42.58	46.10	10.53	.79	--	100.00
CATCH AND ESCAPEMENT						
MALES						
NUMBER	773,888	643,459	183,364	7,493	--	1,608,204
PERCENT	48.12	40.01	11.40	.47	--	45.38
FEMALES						
NUMBER	764,165	923,718	224,780	22,309	367	1,935,339
PERCENT	39.49	47.73	11.61	1.15	.02	54.62
SEXES COMBINED						
NUMBER	1,538,053	1,567,177	408,144	29,802	367	3,543,543
PERCENT	43.40	44.23	11.52	.84	.01	100.00

Table 59. Wood River daily sockeye salmon escapement counts, 1979.

DATE	DAILY COUNT	ACCUMULATIVE COUNT	DAILY PERCENT OF TOTAL	ACCUMULATIVE PERCENT
JUNE 19	180	180	0.01	0.01
20	570	750	0.03	0.04
21	330	1,080	0.02	0.06
22	228	1,308	0.01	0.07
23	78	1,386	0.	0.07
24	276	1,662	0.02	0.09
25	55,026	56,688	3.23	3.32
26	245,730	302,418	14.40	17.72
27	159,702	462,120	9.36	27.08
28	18,462	480,582	1.08	28.16
29	12,480	493,062	0.73	28.89
30	9,348	502,410	0.55	29.44
JULY 1	263,688	766,098	15.45	44.89
2	529,596	1,295,694	31.04	75.93
3	39,468	1,335,162	2.31	78.24
4	8,502	1,343,664	0.50	78.74
5	18,960	1,362,624	1.11	79.85
6	166,998	1,529,622	9.79	89.64
7	115,812	1,645,434	6.79	96.43
8	18,036	1,663,470	1.06	97.49
9	5,952	1,669,422	0.35	97.84
10	5,046	1,674,468	0.30	98.14
11	3,900	1,678,368	0.23	98.37
12	7,704	1,686,072	0.45	98.82
13	5,406	1,691,478	0.32	99.14
14	4,320	1,695,798	0.25	99.39
15	5,190	1,700,988	0.30	99.69
16	4,992	1,705,980	0.29	99.98
17	372	1,706,352	0.02	100.00

Table 60. Wood River escapement of sockeye salmon by sex and sample period, 1979.

PERIOD NUMBER	DATE	NO. OF FISH SAMPLED	COUNT		PERCENT		ESCAPEMENT	NUMBER IN ESCAPEMENT	
			MALES	FEMALES	MALES	FEMALES		MALES	FEMALES
1	06/19-07/17	883	368	515	41.68	58.32	1,706,352	711,141	995,211

Table 61. Wood River escapement of sockeye salmon by age group, sex, and sample period, 1979.

			AGE GROUP				
SAMPLE PERIOD	DATE		42	52	53	63	TOTAL
MALES							
1	06/19-	COUNT	328,516	307,259	71,501	3,865	711,141
	07/17	PERCENT	46.20	43.21	10.05	.54	100.00
FEMALES							
1	06/19-	COUNT	398,085	479,247	108,217	9,662	995,211
	07/17	PERCENT	40.00	48.16	10.87	.97	100.00
SEXES COMBINED							
1	06/19-	COUNT	726,601	786,506	179,718	13,527	1,706,352
	07/17	PERCENT	42.58	46.10	10.53	.79	100.00

Table 62. Wood River escapement of sockeye salmon by age group and sex with length (mm), 1979.

	AGE GROUP				
	42	52	53	63	TOTAL
MALES					
NUMBER	328,516	307,259	71,501	3,865	711,141
AV LENGTH	524.80	585.10	539.20	596.50	552.69
STD ERROR	1.93	2.03	3.68	11.53	1.30
SAMP SIZE	170	159	37	2	368
FEMALES					
NUMBER	398,085	479,247	108,217	9,662	995,211
AV LENGTH	500.10	561.60	513.60	557.60	531.74
STD ERROR	1.78	1.26	2.94	11.09	.99
SAMP SIZE	206	248	56	5	515
SEXES COMBINED					
NUMBER	726,601	786,506	179,718	13,527	706,352
AV LENGTH	511.27	570.78	523.78	568.71	540.47
STD ERROR	1.31	1.10	2.30	8.58	.80
SAMP SIZE	376	407	93	7	883

Table 63. Igushik River apportioned catch and escapement of sockeye salmon by age group and sex, 1979.

	AGE GROUP				TOTAL
	42	52	53	63	
CATCH					
MALES					
NUMBER	233,353	205,475	94,910	5,458	539,196
PERCENT	43.28	38.11	17.60	1.01	56.49
FEMALES					
NUMBER	166,681	149,483	91,248	7,881	415,293
PERCENT	40.14	35.99	21.97	1.90	43.51
SEXES COMBINED					
NUMBER	400,034	354,958	186,158	13,339	954,489
PERCENT	41.91	37.19	19.50	1.40	100.00
ESCAPEMENT					
MALES					
NUMBER	172,126	187,787	60,665	5,814	426,392
PERCENT	40.37	44.04	14.23	1.36	49.61
FEMALES					
NUMBER	181,254	161,179	84,715	6,020	433,168
PERCENT	41.84	37.21	19.56	1.39	50.39
SEXES COMBINED					
NUMBER	353,380	348,966	145,380	11,834	859,560
PERCENT	41.11	40.60	16.91	1.38	100.00
CATCH AND ESCAPEMENT					
MALES					
NUMBER	405,479	393,262	155,575	11,272	965,588
PERCENT	41.99	40.73	16.11	1.17	53.23
FEMALES					
NUMBER	347,935	310,662	175,963	13,901	848,461
PERCENT	41.01	36.61	20.74	1.64	46.77
SEXES COMBINED					
NUMBER	753,414	703,924	331,538	25,173	1,814,049
PERCENT	41.53	38.80	18.28	1.39	100.00

Table 64. Igushik River daily sockeye salmon escapement counts, 1979.

DATE	DAILY COUNT	ACCUMULATIVE COUNT	DAILY PERCENT OF TOTAL	ACCUMULATIVE PERCENT
JUNE 21	324	324	0.04	0.04
22	1,068	1,392	0.12	0.16
23	912	2,304	0.11	0.27
24	1,596	3,900	0.19	0.46
25	1,752	5,652	0.20	0.66
26	5,352	11,004	0.62	1.28
27	18,816	29,820	2.19	3.47
28	27,600	57,420	3.21	6.68
29	30,456	87,876	3.54	10.22
30	29,706	117,582	3.46	13.68
JULY 1	27,678	145,260	3.22	16.90
2	64,026	209,286	7.45	24.35
3	88,686	297,972	10.32	34.67
4	63,852	361,824	7.43	42.10
5	72,126	433,950	8.39	50.49
6	56,952	490,902	6.63	57.12
7	46,140	537,042	5.37	62.49
8	60,294	597,336	7.01	69.50
9	53,148	650,484	6.18	75.68
10	40,116	690,600	4.67	80.35
11	25,050	715,650	2.91	83.26
12	23,442	739,092	2.73	85.99
13	20,742	759,834	2.41	88.40
14	12,522	772,356	1.46	89.86
15	15,192	787,548	1.77	91.63
16	12,090	799,638	1.41	93.04
17	7,986	807,624	0.93	93.97
18	5,598	813,222	0.65	94.62
19	5,286	818,508	0.61	95.23
20	3,882	822,390	0.45	95.68
21	4,116	826,506	0.48	96.16
22	4,686	831,192	0.54	96.70
23	7,914	839,106	0.92	97.62
24	5,760	844,866	0.67	98.29
25	5,472	850,338	0.64	98.93
26	7,218	857,556	0.84	99.77
27	2,010	859,566	0.23	100.00

Table 65. Igushik River escapement of sockeye salmon by sex and sample period, 1979.

PERIOD NUMBER	DATE	NO. OF FISH SAMPLED	COUNT		PERCENT		ESCAPEMENT	NUMBER IN ESCAPEMENT	
			MALES	FEMALES	MALES	FEMALES		MALES	FEMALES
1	06/21-06/30	571	264	307	46.23	53.77	117,582	54,364	63,218
2	07/01-07/27	714	358	356	50.14	49.86	741,978	372,028	369,950
TOTAL		1,285	622	663	49.61	50.39	859,560	426,392	433,168

Table 66. Igushik River escapement of sockeye salmon by age group, sex, and sample period, 1979.

SAMPLE PERIOD		AGE GROUP					
DATE		42	52	53	63	TOTAL	
MALES							
1	06/21-	COUNT	18,327	32,948	2,471	618	54,364
	06/30	PERCENT	33.71	60.61	4.55	1.14	12.75
2	07/01-	COUNT	153,799	154,839	58,194	5,196	372,028
	07/27	PERCENT	41.34	41.62	15.64	1.40	87.25
COLUMN TOTALS		COUNT	172,126	187,787	60,665	5,814	426,392
		PERCENT	40.37	44.04	14.23	1.36	100.00
FEMALES							
1	06/21-	COUNT	20,180	33,359	8,855	824	63,218
	06/30	PERCENT	31.92	52.77	14.01	1.30	14.59
2	07/01-	COUNT	161,074	127,820	75,860	5,196	369,950
	07/27	PERCENT	43.54	34.55	20.51	1.40	85.41
COLUMN TOTALS		COUNT	181,254	161,179	84,715	6,020	433,168
		PERCENT	41.84	37.21	19.56	1.39	100.00
SEXES COMBINED							
1	06/21-	COUNT	38,507	66,307	11,326	1,442	117,582
	06/30	PERCENT	32.75	56.39	9.63	1.23	13.68
2	07/01-	COUNT	314,873	282,659	134,054	10,392	741,978
	07/27	PERCENT	42.44	38.09	18.07	1.40	86.32
COLUMN TOTALS		COUNT	353,380	348,966	145,380	11,834	859,560
		PERCENT	41.11	40.60	16.91	1.38	100.00

Table 67. Igushik River escapement of sockeye salmon by age group and sex with length (mm), 1979.

	AGE GROUP				
	42	52	53	63	TOTAL
MALES					
NUMBER	172,126	187,787	60,665	5,814	426,392
AV LENGTH	536.82	601.32	554.41	572.75	568.22
STD ERROR	1.24	1.56	2.20	6.41	.94
SAMP SIZE	237	309	68	8	622
FEMALES					
NUMBER	181,254	161,179	84,715	6,020	433,168
AV LENGTH	511.50	566.15	524.00	574.98	535.16
STD ERROR	1.26	1.28	1.78	9.02	.81
SAMP SIZE	253	285	116	9	663
SEXES COMBINED					
NUMBER	353,380	348,966	145,380	11,834	859,560
AV LENGTH	523.83	585.08	536.69	573.88	551.56
STD ERROR	.89	1.02	1.39	5.65	.62
SAMP SIZE	490	594	184	17	1,285

Table 68. Nuyakuk River apportioned catch and escapement of sockeye salmon by age group and sex, 1979.

	AGE GROUP					
	32	42	52	53	63	TOTAL
<hr/>						
CATCH						
MALES						
NUMBER	--	129,062	52,609	2,256	--	183,927
PERCENT	--	70.17	28.60	1.23	--	48.08
FEMALES						
NUMBER	--	133,528	62,874	1,553	630	198,585
PERCENT	--	67.24	31.66	.78	.32	51.92
SEXES COMBINED						
NUMBER	--	262,590	115,483	3,809	630	382,512
PERCENT	--	68.65	30.19	1.00	.16	100.00
ESCAPEMENT						
MALES						
NUMBER	--	95,199	48,080	1,442	--	144,721
PERCENT	--	65.78	33.22	1.00	--	40.19
FEMALES						
NUMBER	481	145,202	67,793	1,442	481	215,399
PERCENT	.23	67.41	31.47	.67	.22	59.81
SEXES COMBINED						
NUMBER	481	240,401	115,873	2,884	481	360,120
PERCENT	.13	66.76	32.18	.80	.13	100.00
CATCH AND ESCAPEMENT						
MALES						
NUMBER	--	224,261	100,689	3,698	--	328,648
PERCENT	--	68.24	30.64	1.12	--	44.25
FEMALES						
NUMBER	481	278,730	130,667	2,995	1,111	413,984
PERCENT	.12	67.33	31.56	.72	.27	55.75
SEXES COMBINED						
NUMBER	481	502,991	231,356	6,693	1,111	742,632
PERCENT	.07	67.73	31.15	.90	.15	100.00

Table 69. Nuyakuk River daily sockeye salmon escapement counts, 1979.

DATE	DAILY COUNT	ACCUMULATIVE COUNT	DAILY PERCENT OF TOTAL	ACCUMULATIVE PERCENT
JUNE 30	168	168	0.05	0.05
JULY 1	3,510	3,678	0.97	1.02
2	24,492	28,170	6.80	7.82
3	46,746	74,916	12.98	20.80
4	26,124	101,040	7.25	28.05
5	12,006	113,046	3.33	31.38
6	49,326	162,372	13.70	45.08
7	55,206	217,578	15.33	60.41
8	38,208	255,786	10.61	71.02
9	17,340	273,126	4.82	75.84
10	11,448	284,574	3.18	79.02
11	33,198	317,772	9.22	88.24
12	21,660	339,432	6.01	94.25
13	9,486	348,918	2.63	96.88
14	3,084	352,002	0.86	97.74
15	2,334	354,336	0.65	98.39
16	2,316	356,652	0.64	99.03
17	2,400	359,052	0.67	99.70
18	1,068	360,120	0.30	100.00

Table 70. Nuyakuk River escapement of sockeye salmon by sex and sample period, 1979.

PERIOD NUMBER	DATE	NO. OF FISH SAMPLED	COUNT		PERCENT		ESCAPEMENT	NUMBER IN ESCAPEMENT	
			MALES	FEMALES	MALES	FEMALES		MALES	FEMALES
1	06/30-07/18	749	301	448	40.19	59.81	360,120	144,721	215,399

Table 71. Nuyakuk River escapement of sockeye salmon by age group, sex, and sample period, 1979.

			AGE GROUP					
SAMPLE PERIOD	DATE		32	42	52	53	63	TOTAL
MALES								
1	06/30-	COUNT	--	95,199	48,080	1,442	--	144,721
	07/18	PERCENT	--	65.78	33.22	1.00	--	100.00
FEMALES								
1	06/30-	COUNT	481	145,202	67,793	1,442	481	215,399
	07/18	PERCENT	.22	67.41	31.47	.67	.22	100.00
SEXES COMBINED								
1	06/30-	COUNT	481	240,401	115,873	2,884	481	360,120
	07/18	PERCENT	.13	66.76	32.18	.80	.13	100.00

Table 72. Nuyakuk River escapement of sockeye salmon by age group and sex with length (mm), 1979.

	AGE GROUP					
	32	42	52	53	63	TOTAL
MALES						
NUMBER	0	95,199	48,080	1,442	0	144,721
AV LENGTH		524.80	598.20	534.70		549.28
STD ERROR		1.96	2.51	7.68		1.54
SAMP SIZE	0	198	100	3	0	301
FEMALES						
NUMBER	481	145,202	67,793	1,442	481	215,399
AV LENGTH	439.00	499.00	564.40	539.30	560.00	519.86
STD ERROR		1.14	1.82	13.86		.96
SAMP SIZE	1	302	141	3	1	448
SEXES COMBINED						
NUMBER	481	240,401	115,873	2,884	481	360,120
AV LENGTH	439.00	509.22	578.42	537.00	560.00	531.68
STD ERROR		1.04	1.49	7.92		.84
SAMP SIZE	1	500	241	6	1	749

Table 73. Snake River apportioned catch and escapement of sockeye salmon by age group and sex, 1979.

	AGE GROUP				
	42	52	53	63	TOTAL
CATCH					
MALES					
NUMBER	3,312	1,735	99	119	5,265
PERCENT	62.91	32.95	1.88	2.26	57.11
FEMALES					
NUMBER	2,042	1,589	239	84	3,954
PERCENT	51.64	40.19	6.05	2.12	42.89
SEXES COMBINED					
NUMBER	5,354	3,324	338	203	9,219
PERCENT	58.07	36.06	3.67	2.20	100.00
ESCAPEMENT					
MALES					
NUMBER	2,443	1,586	63	127	4,219
PERCENT	57.91	37.59	1.49	3.01	49.99
FEMALES					
NUMBER	2,221	1,713	222	64	4,220
PERCENT	52.63	40.59	5.26	1.52	50.01
SEXES COMBINED					
NUMBER	4,664	3,299	285	191	8,439
PERCENT	55.27	39.09	3.38	2.26	100.00
CATCH AND ESCAPEMENT					
MALES					
NUMBER	5,755	3,321	162	246	9,484
PERCENT	60.68	35.02	1.71	2.59	53.71
FEMALES					
NUMBER	4,263	3,302	461	148	8,174
PERCENT	52.15	40.40	5.64	1.81	46.29
SEXES COMBINED					
NUMBER	10,018	6,623	623	394	17,658
PERCENT	56.73	37.51	3.53	2.23	100.00

Table 74. Snake River daily sockeye salmon escapement counts, 1979.

DATE	DAILY COUNT	ACCUMULATIVE COUNT	DAILY PERCENT OF TOTAL	ACCUMULATIVE PERCENT
JUNE 20	1	1	0.01	0.01
26	4	5	0.05	0.06
27	17	22	0.20	0.26
28	292	314	3.46	3.72
29	282	596	3.34	7.06
30	80	676	0.95	8.01
JULY 1	212	888	2.51	10.52
2	636	1,524	7.54	18.06
3	2,119	3,643	25.11	43.17
4	1,076	4,719	12.75	55.92
5	606	5,325	7.18	63.10
6	326	5,651	3.86	66.96
7	430	6,081	5.10	72.06
8	852	6,933	10.10	82.16
9	496	7,429	5.88	88.04
10	277	7,706	3.28	91.32
11	143	7,849	1.69	93.01
12	110	7,959	1.30	94.31
13	87	8,046	1.03	95.34
14	85	8,131	1.01	96.35
15	56	8,187	0.66	97.01
16	19	8,206	0.23	97.24
17	37	8,243	0.44	97.68
18	91	8,334	1.08	98.76
19	61	8,395	0.72	99.48
20	44	8,439	0.52	100.00
21	0	8,439	0.	100.00
22	0	8,439	0.	100.00
23	0	8,439	0.	100.00
24	0	8,439	0.	100.00

Table 75. Snake River escapement of sockeye salmon by sex and sample period, 1979.

NUMBER	DATE	SAMPLED	MALES	FEMALES	MALES	FEMALES	ESCAPEMENT	MALES	FEMALES
1	06/20-07/24	266	133	133	50.00	50.00	8,439	4,219	4,220

Table 76. Snake River escapement of sockeye salmon by age group, sex, and sample period, 1979.

		AGE GROUP					
SAMPLE PERIOD	DATE		42	52	53	63	TOTAL
MALES							
1	06/20-	COUNT	2,443	1,586	63	127	4,219
	07/24	PERCENT	57.89	37.59	1.50	3.01	100.00
FEMALES							
1	06/20-	COUNT	2,221	1,713	222	64	4,220
	07/24	PERCENT	52.63	40.60	5.26	1.50	100.00
SEXES COMBINED							
1	06/20-	COUNT	4,664	3,299	285	191	8,439
	07/24	PERCENT	55.27	39.09	3.38	2.26	100.00

Table 77. Snake River escapement of sockeye salmon by age group and sex with length (mm) and weight (kg), 1979.

	AGE GROUP				
	42	52	53	63	TOTAL
MALES					
NUMBER	2,443	1,586	63	127	4,219
AV LENGTH	542.70	600.50	558.50	604.80	566.53
STD ERROR	2.31	3.75	28.50	13.25	2.03
SAMP SIZE	77	50	2	4	133
AV WEIGHT	2.80	4.11	3.09		3.31
STD ERROR	.06	.11	.40		.05
SAMP SIZE	37	19	2	0	58
FEMALES					
NUMBER	2,221	1,713	222	64	4,220
AV LENGTH	514.40	575.30	543.60	575.00	541.58
STD ERROR	2.61	2.80	10.13	5.02	1.86
SAMP SIZE	70	54	7	2	133
AV WEIGHT	2.26	3.24	2.86		2.70
STD ERROR	.07	.06	.17		.04
SAMP SIZE	25	26	3	0	54
SEXES COMBINED					
NUMBER	4,664	3,299	285	191	8,439
AV LENGTH	529.22	587.41	546.89	594.81	554.05
STD ERROR	1.73	2.32	10.11	8.99	1.38
SAMP SIZE	147	104	9	6	266
AV WEIGHT	2.54	3.66	2.91		3.00
STD ERROR	.04	.06	.19		.03
SAMP SIZE	62	45	5	0	112

Table 78. Nushagak-Mulchatna River apportioned catch and escapement of sockeye salmon by age group and sex, 1979.

	AGE GROUP								
	31	32	41	42	52	53	62	63	TOTAL
CATCH									
MALES									
NUMBER	2,100	--	5,008	9,796	46,700	3,634	--	6,211	73,449
PERCENT	2.86	--	6.82	13.34	63.58	4.95	--	8.45	51.03
FEMALES									
NUMBER	--	--	7,889	6,645	39,583	2,503	5,202	8,664	70,486
PERCENT	--	--	11.19	9.43	56.16	3.55	7.38	12.29	48.97
SEXES COMBINED									
NUMBER	2,100	--	12,897	16,441	86,283	6,137	5,202	14,875	143,935
PERCENT	1.46	--	8.96	11.42	59.95	4.26	3.61	10.34	100.00
ESCAPEMENT									
MALES									
NUMBER	484	41	7,938	7,226	42,680	2,323	1,860	6,617	69,169
PERCENT	.70	.06	11.47	10.45	61.70	3.36	2.69	9.57	50.01
FEMALES									
NUMBER	484	--	7,939	7,226	42,680	2,324	1,860	6,618	69,131
PERCENT	.70	--	11.49	10.45	61.74	3.36	2.69	9.57	49.99
SEXES COMBINED									
NUMBER	968	41	15,877	14,452	85,360	4,647	3,720	13,235	138,300
PERCENT	.70	.03	11.48	10.45	61.72	3.36	2.69	9.57	100.00
CATCH AND ESCAPEMENT									
MALES									
NUMBER	2,584	41	12,946	17,022	89,380	5,957	1,860	12,828	142,618
PERCENT	1.81	.03	9.08	11.94	62.67	4.18	1.30	8.99	50.53
FEMALES									
NUMBER	484	--	15,828	13,871	82,263	4,827	7,062	15,282	139,617
PERCENT	.35	--	11.34	9.93	58.92	3.46	5.06	10.94	49.47
SEXES COMBINED									
NUMBER	3,068	41	28,774	30,893	171,643	10,784	8,922	28,110	282,235
PERCENT	1.09	.01	10.19	10.95	60.82	3.82	3.16	9.96	100.00

TOGIAC DISTRICT

The 1979 pre-season-forecast sockeye salmon return was 467,000 while the actual run totaled 632,000, or 34% larger than predicted. The fishery began the week of June 4 and the peak of the harvest occurred July 9-14 when over 126,000 sockeye were caught in a five day period. The total harvest of all species was 832,000 salmon of which 461,000 were sockeye. The sockeye salmon escapement was 171,000. Catch, escapement, and biological data are presented in Tables 76 through 93. Fishing effort was at record levels in 1983 with approximately 200 drift units and 50 to 60 set net units operating at one time.

Two of the seven companies that operated in Togiak were forced to suspend buying for 48 hours each because of fish in excess of their capacity; however, the suspensions did not serve to reduce the harvest because other buyers present were able to handle the overflow. The resultant harvest of 561,000 sockeye exceeded the previous record of 453,000 in 1978. The Togiak River escapement past the counting tower was over 171,000 by the end of the season. An additional 54,000 sockeye were enumerated during the aerial surveys of numerous tributary streams, bringing the District total escapement to 225,000. The total sockeye run into the Togiak area amounted to 686,000 fish, including those estimated by aerial survey.

A total of 3,680 usable samples were taken from the commercial catch and 892 from the escapement. The catch was composed mainly of age classes 4₂ (44%) and 5₂ (48%). The average length and weight of sockeye in the catch were estimated to be 559 mm and 3.39 kg. The sex composition was 45% male. Escapement samples indicated a higher percentage of age 5₂ fish (60%) and a higher proportion of males (57%). The average length of sockeye in the escapement was 573 mm. Commercial catches of other species were all above average. There were 30,000 chinooks harvested in 1979 compared with the record of 57,000 in 1978 and 22,000 as the long term average; 220,000 chums harvested compared with the record of 275,000 in 1978 and 139,000 as the long term average and 119,000 cohos harvested compared with the previous high of 45,000 in 1977 and 16,000 as the long term average.

Extensive aerial surveys are conducted in the Togiak area to estimate escapement of chinook and chum salmon. In 1979, the District chinook salmon escapement was estimated to total 20,000 fish, just above the average escapement of 16,000 since 1967, and the total run, catch and escapement combined, amounted to 50,000 chinooks compared with the average of 39,000 since total run records have been available. The chum salmon escapement of 293,000 was also above the 248,000 average escapement, and the total run of 513,000 chums was well above the long term average of 390,000 fish.

(Shaded areas are fishing districts.
Scale: 1 inch = 10 miles)

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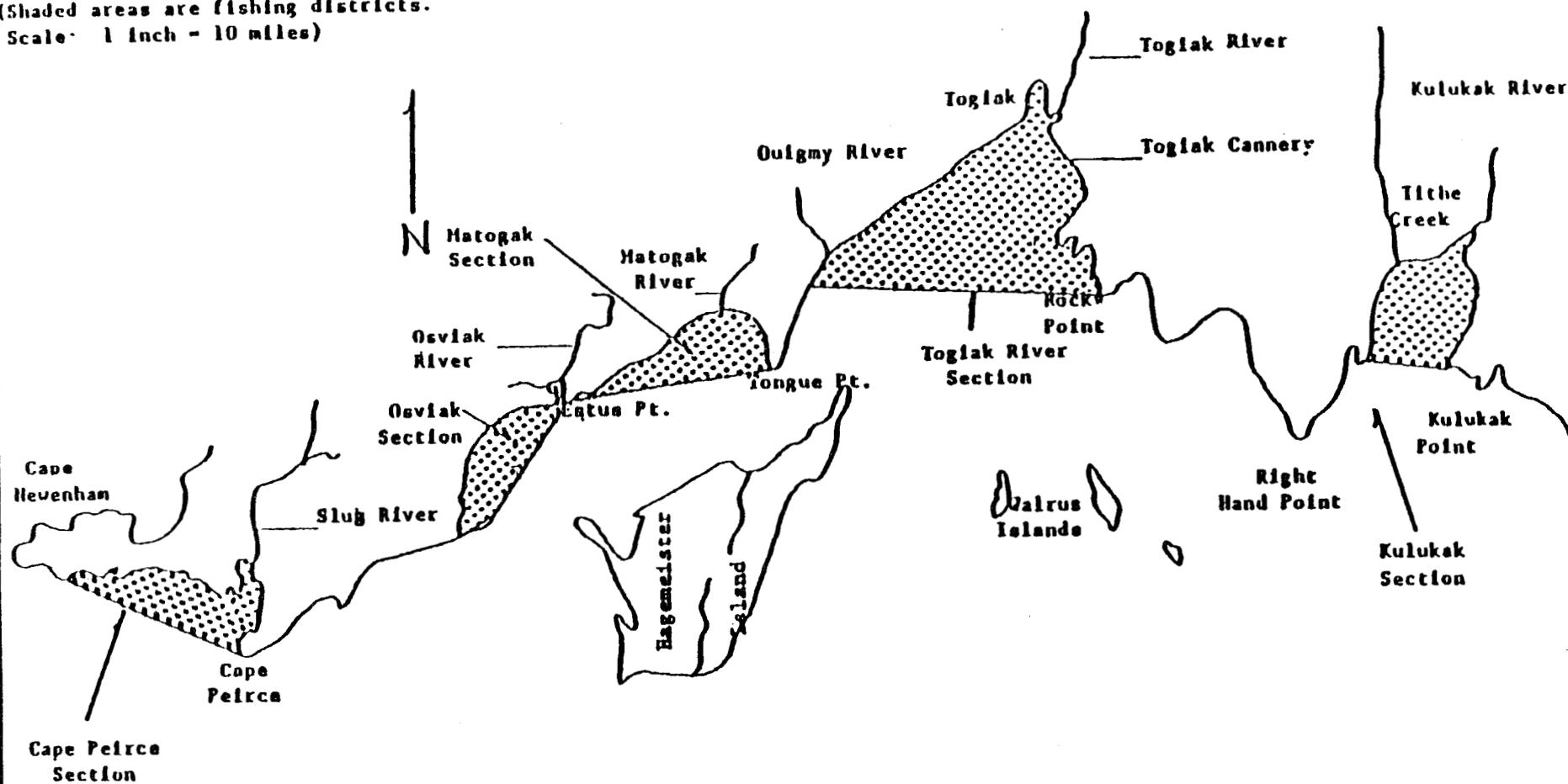


Figure 6. Togiak District commercial fishing boundaries, 1979.

Table 79. Togiak District commercial salmon catch by species and fishing effort by gear type by period, 1979.

Period	Time ¹	Effort		Number of Fish					
		Drift	Set	Sockeye	King	Chum	Pink	Coho	Total
6/ 4- 9	5 days	27	3	73	576	5			654
6/11-16	5 days	93	27	972	3,333	141			4,446
6/18-23	5 days	147	45	15,386	8,631	1,814	21		25,852
6/25-30	5 days	130	40	58,601	7,619	12,393	560		79,173
7/ 2- 7	5 days	173	64	85,595	5,665	29,029	664		120,953
7/ 9-14	5 days	142	49	125,641	2,545	57,139	393		185,718
7/16-21	5 days ²	197	56	86,308	984	64,717	82		152,091
7/23-28	5 days ²	173	41	61,743	310	32,008	75	19	94,155
7/30-8/4	5 days	145	37	18,440	79	15,074	38	884	34,515
8/ 6-11	5 days	101	29	5,391	45	4,013	27	3,339	12,815
8/13-18	5 days	126	36	1,873	194	1,956	31	23,486	27,540
8/20-25	5 days	140	29	791	18	1,387	15	36,779	38,990
8/27-9/1	5 days	130	31	153	16	247	7	44,531	44,954
9/ 3- 8	5 days	52	8	17	7	19		10,365	10,408
Total				460,984	30,022	219,942	1,913	119,403	832,264
Percent of District Catch				55.4	3.6	26.4	0.2	14.4	100.0

Summary Catch by Section

Section	Number of Fish					Total
	Sockeye	King	Chum	Pink	Coho	
Togiak	393,337	27,744	208,212	1,802	80,073	711,168
Kulukak	66,629	2,106	10,848	88	32,272	111,943
Osviak	726	171	682	18	6,666	8,263
Matogak	292	1	200	5	392	890
Total	460,984	30,022	219,942	1,913	119,403	832,264

¹ Togiak River section open 4 days-per-week, while other sections open 5 days-per-week.

² Fishing time in Togiak River section extended 36 hours.

Table 80. Togiak River catch and escapement of sockeye salmon by age group and sex, 1979.

	AGE GROUP								
	31	41	42	51	52	53	62	63	TOTAL
CATCH									
MALES									
NUMBER	467	1,096	93,076	0	98,725	11,086	166	4,967	209,583
PERCENT	.10	.24	20.19	0.00	21.42	2.40	.04	1.08	45.46
FEMALES									
NUMBER	0	3,137	107,469	110	124,412	10,213	386	5,674	251,401
PERCENT	0.00	.68	23.31	.02	26.99	2.22	.08	1.23	54.54
SEXES COMBINED									
NUMBER	467	4,233	200,545	110	223,137	21,299	552	10,641	460,984
PERCENT	.10	.92	43.50	.02	48.40	4.62	.12	2.31	100.00
ESCAPEMENT									
MALES									
NUMBER	0	0	34,416	0	60,116	1,464	148	874	97,018
PERCENT	0.00	0.00	20.11	0.00	35.13	.86	.09	.51	56.69
FEMALES									
NUMBER	0	0	28,168	0	41,863	1,022	0	3,067	74,120
PERCENT	0.00	0.00	16.46	0.00	24.46	.60	0.00	1.79	43.31
SEXES COMBINED									
NUMBER	0	0	62,584	0	101,979	2,486	148	3,941	171,138
PERCENT	0.00	0.00	36.57	0.00	59.59	1.45	.09	2.30	100.00
CATCH AND ESCAPEMENT									
MALES									
NUMBER	467	1,096	127,492	0	158,841	12,550	314	5,841	306,601
PERCENT	.07	.17	20.17	0.00	25.13	1.99	.05	.92	48.50
FEMALES									
NUMBER	0	3,137	135,637	110	166,275	11,235	386	8,741	325,521
PERCENT	0.00	.50	21.46	.02	26.30	1.78	.06	1.38	51.50
SEXES COMBINED									
NUMBER	467	4,233	263,129	110	325,116	23,785	700	14,582	632,122
PERCENT	.07	.67	41.63	.02	51.43	3.76	.11	2.31	100.00

Table 81. Togiak District commercial catch of sockeye salmon by sex and sample period, 1979.

PERIOD NUMBER	DATE	NO. OF FISH SAMPLED	COUNT		PERCENT		CATCH	NUMBER IN CATCH	
			MALES	FEMALES	MALES	FEMALES		MALES	FEMALES
1	06/01-06/22	506	226	280	44.66	55.34	13,897	6,207	7,690
2	06/23-07/02	702	287	415	40.88	59.12	77,058	31,504	45,554
3	07/03-07/12	812	373	439	45.94	54.06	179,303	82,365	96,938
4	07/13-07/20	578	282	296	48.79	51.21	93,807	45,767	48,040
5	07/21-07/26	544	248	296	45.59	54.41	51,564	23,507	28,057
6	07/27-09/07	538	240	298	44.61	55.39	45,355	20,233	25,122
TOTAL		3,680	1,656	2,024	45.46	54.54	460,984	209,583	251,401

Table 82. Togiak District commercial catch of sockeye salmon by age group, sex, and sample period, 1979.

SAMPLE PERIOD	DATE		AGE GROUP								TOTAL
			31	41	42	51	52	53	62	63	
MALES											
1	06/01-06/22	COUNT	—	—	934	—	4,889	55	82	247	6,207
		PERCENT	—	—	15.04	—	78.76	.88	1.33	3.98	2.96
2	06/23-07/02	COUNT	—	110	10,318	—	18,771	878	—	1,427	31,504
		PERCENT	—	.35	32.75	—	59.58	2.79	—	4.53	15.03
3	07/03-07/12	COUNT	221	662	32,902	—	44,163	2,650	—	1,767	82,365
		PERCENT	.27	.80	39.95	—	53.62	3.22	—	2.14	39.30
4	07/13-07/20	COUNT	162	324	25,156	—	14,931	4,869	—	325	45,767
		PERCENT	.35	.71	54.96	—	32.62	10.64	—	.71	21.84
5	07/21-07/26	COUNT	—	—	12,891	—	7,962	1,706	—	948	23,507
		PERCENT	—	—	54.84	—	33.87	7.26	—	4.03	11.22
6	07/27-09/07	COUNT	84	—	10,875	—	8,009	928	84	253	20,233
		PERCENT	.42	—	53.75	—	39.58	4.58	.42	1.25	9.65
COLUMN TOTALS		COUNT	467	1,096	93,076	—	98,725	11,086	166	4,967	209,583
		PERCENT	.22	.52	44.41	—	47.11	5.29	.08	2.37	100.00
FEMALES											
1	06/01-06/22	COUNT	—	—	275	—	7,113	55	55	192	7,690
		PERCENT	—	—	3.57	—	92.50	.71	.71	2.50	3.06
2	06/23-07/02	COUNT	—	988	8,562	110	33,809	768	110	1,207	45,554
		PERCENT	—	2.17	18.80	.24	74.22	1.69	.24	2.65	18.12
3	07/03-07/12	COUNT	—	1,987	37,318	—	53,879	1,766	221	1,767	96,938
		PERCENT	—	2.05	38.50	—	55.58	1.82	.23	1.82	38.56
4	07/13-07/20	COUNT	—	162	26,454	—	15,094	4,707	—	1,623	48,040
		PERCENT	—	.34	55.07	—	31.42	9.80	—	3.38	19.11
5	07/21-07/26	COUNT	—	—	17,915	—	7,773	1,990	—	379	28,057
		PERCENT	—	—	63.85	—	27.70	7.09	—	1.35	11.16
6	07/27-09/07	COUNT	—	—	16,945	—	6,744	927	—	506	25,122
		PERCENT	—	—	67.45	—	26.85	3.69	—	2.01	9.99
COLUMN TOTALS		COUNT	—	3,137	107,469	110	124,412	10,213	386	5,674	251,401
		PERCENT	—	1.25	42.75	.04	49.49	4.06	.15	2.26	100.00
SEXES COMBINED											
1	06/01-06/22	COUNT	—	—	1,209	—	12,002	110	137	439	13,897
		PERCENT	—	—	8.70	—	86.36	.79	.99	3.16	3.01
2	06/23-07/02	COUNT	—	1,098	18,880	110	52,580	1,646	110	2,634	77,058
		PERCENT	—	1.43	24.50	.14	68.23	2.14	.14	3.42	16.72
3	07/03-07/12	COUNT	221	2,649	70,220	—	98,042	4,416	221	3,534	179,303
		PERCENT	.13	1.48	39.16	—	54.68	2.46	.12	1.97	38.90
4	07/13-07/20	COUNT	162	486	51,610	—	30,025	9,576	—	1,948	93,807
		PERCENT	.17	.52	55.02	—	32.01	10.21	—	2.07	20.35
5	07/21-07/26	COUNT	—	—	30,806	—	15,735	3,696	—	1,327	51,564
		PERCENT	—	—	59.74	—	30.52	7.17	—	2.57	11.18
6	07/27-09/07	COUNT	84	—	27,820	—	14,753	1,855	84	759	45,355
		PERCENT	.18	—	61.34	—	32.53	4.09	.19	1.67	9.84
COLUMN TOTALS		COUNT	467	4,233	200,545	110	223,137	21,299	552	10,641	460,984
		PERCENT	.10	.92	43.50	.02	48.41	4.62	.12	2.31	100.00

Table 83. Togiak District commercial catch of sockeye salmon by age group and sex with length (mm) and weight (kg), 1979.

	AGE GROUP								
	31	41	42	51	52	53	62	63	TOTAL
MALES									
NUMBER	467	1,096	93,076	0	98,725	11,086	166	4,967	209,583
AV LENGTH	561.14	590.55	544.78		602.83	551.38	600.56	596.30	574.02
STD ERROR		8.27	.76		.80	2.38	14.51	3.80	.54
SAMP SIZE	3	6	697	0	820	81	4	45	1,656
AV WEIGHT		3.63	3.23		4.35	3.31	4.25	4.36	3.79
STD ERROR			.03		.04	.10	.08	.12	.02
SAMP SIZE	0	2	180	0	194	27	3	19	425
FEMALES									
NUMBER	0	3,137	107,469	110	124,412	10,213	386	5,674	251,401
AV LENGTH		562.74	518.38	537.00	572.05	533.06	566.72	567.62	547.28
STD ERROR		6.25	.64		.65	2.08	.25	2.60	.44
SAMP SIZE	0	19	810	1	1,066	78	4	46	2,024
AV WEIGHT		3.38	2.60		3.45	2.87	3.38	3.51	3.06
STD ERROR		.15	.02		.03	.06	.12	.09	.02
SAMP SIZE	0	2	191	0	258	37	4	12	504
SEXES COMBINED									
NUMBER	467	4,233	200,545	110	223,137	21,299	552	10,641	460,984
AV LENGTH	561.14	569.94	530.63	537.00	585.67	542.60	576.89	581.01	559.44
STD ERROR		5.15	.49		.51	1.59	7.25	2.29	.34
SAMP SIZE	3	25	1,507	1	1,886	159	8	91	3,680
AV WEIGHT		3.49	2.89		3.85	3.10	3.64	3.90	3.39
STD ERROR		.10	.02		.02	.05	.08	.08	.01
SAMP SIZE	0	4	371	0	452	64	7	31	929

Table 84. Togiak District commercial catch of chinook salmon by sex and sample period, 1979.

PERIOD NUMBER	DATE	NO. OF FISH SAMPLED	COUNT		PERCENT		CATCH	NUMBER IN CATCH	
			MALES	FEMALES	MALES	FEMALES		MALES	FEMALES
1	6/ 4- 9/ 8	439	303	136	69.02	30.98	30,022	20,721	9,301

Table 85. Togiak District commercial catch of chinook salmon by age group, sex, and sample period, 1979.

			AGE GROUP							
SAMPLE										
PERIOD	DATE		32	42	52	62	72	73	83	TOTAL
MALES										
1	6/ 4-	COUNT	68	10,258	2,462	6,223	1,573	137	0	20,721
	9/ 8	PERCENT	.33	49.51	11.88	30.03	7.59	.66	0.00	100.00
FEMALES										
1	6/ 4-	COUNT	0	0	205	5,814	3,214	0	68	9,301
	9/ 8	PERCENT	0.00	0.00	2.20	62.51	34.56	0.00	.73	100.00
SEXES COMBINED										
1	6/ 4-	COUNT	68	10,258	2,667	12,037	4,787	137	68	30,022
	9/ 8	PERCENT	.23	34.17	8.88	40.09	15.94	.46	.23	100.00

Table 86. Togiak District commercial catch of chinook salmon by age group and sex with length (mm) and weight (kg), 1979.

	AGE GROUP							
	32	42	52	62	72	73	83	TOTAL
MALES								
NUMBER	68	10,258	2,462	6,223	1,573	137	0	20,721
AV LENGTH	303.00	559.81	702.08	893.34	994.04	892.50		711.20
STD ERROR		4.23	17.09	7.61	11.65	112.50		3.88
SAMP SIZE	1	150	36	91	23	2	0	303
AV WEIGHT		3.65	6.49	12.76	16.50			7.74
STD ERROR		.19	.60	.72	.99			.29
SAMP SIZE	0	31	8	25	9	0	0	73
FEMALES								
NUMBER	0	0	205	5,814	3,214	0	68	9,301
AV LENGTH			771.67	886.35	941.83		936.00	903.36
STD ERROR			7.17	5.21	6.26			3.91
SAMP SIZE	0	0	3	85	47	0	1	136
AV WEIGHT			7.93	11.65	14.59			12.59
STD ERROR				.36	.36			.26
SAMP SIZE	0	0	1	27	13	0	0	41
SEXES COMBINED								
NUMBER	68	10,258	2,667	12,037	4,787	137	68	30,022
AV LENGTH	303.00	559.81	707.43	889.96	958.99	892.50	936.00	770.73
STD ERROR		4.23	15.79	4.67	5.69	112.50		2.94
SAMP SIZE	1	150	39	176	70	2	1	439
AV WEIGHT		3.65	6.60	12.22	15.22			9.25
STD ERROR		.19	.53	.40	.46			.21
SAMP SIZE	0	31	9	52	22	0	0	114

Table 87. Togiak District commercial catch of coho salmon by sex and sample period, 1979.

PERIOD NUMBER	DATE	NO. OF FISH SAMPLED	COUNT		PERCENT		CATCH	NUMBER IN CATCH	
			MALES	FEMALES	MALES	FEMALES		MALES	FEMALES
1	7/23- 9/ 8	342	217	125	63.45	36.55	119,403	75,762	43,641

Table 88. Togiak District commercial catch of coho salmon by age group, sex, and sample period, 1979.

			AGE GROUP			
SAMPLE						
PERIOD	DATE		32	43	54	TOTAL
MALES						
1	7/23- 9/ 8	COUNT PERCENT	2,793 3.69	71,223 94.01	1,746 2.30	75,762 100.00
FEMALES						
1	7/23- 9/ 8	COUNT PERCENT	0 0.00	43,292 99.20	349 .80	43,641 100.00
SEXES COMBINED						
1	7/23- 9/ 8	COUNT PERCENT	2,793 2.34	114,515 95.91	2,095 1.75	119,403 100.00

Table 89. Togiak District commercial catch of coho salmon by age group and sex with length (mm) and weight (kg), 1979.

	AGE GROUP			
	32	43	54	TOTAL
MALES				
NUMBER	2,793	71,223	1,746	75,762
AV LENGTH	577.25	597.96	632.80	598.00
STD ERROR	14.97	2.63	12.67	2.55
SAMP SIZE	8	204	5	217
FEMALES				
NUMBER	0	43,292	349	43,641
AV LENGTH		601.35	620.00	601.50
STD ERROR		2.13		2.12
SAMP SIZE	0	124	1	125
SEXES COMBINED				
NUMBER	2,793	114,515	2,095	119,403
AV LENGTH	577.25	599.24	630.67	599.28
STD ERROR	14.97	1.82	10.56	1.79
SAMP SIZE	8	328	6	342

Table 90. Togiak District commercial catch of chum salmon by sex and sample period, 1979.

PERIOD NUMBER	DATE	NO. OF FISH SAMPLED	COUNT		PERCENT		CATCH	NUMBER IN CATCH	
			MALES	FEMALES	MALES	FEMALES		MALES	FEMALES
1	6/ 4- 9/ 8	1,118	441	677	39.45	60.55	219,942	86,757	133,185

Table 91. Togiak District commercial catch of chum salmon by age group, sex, and sample period, 1979.

			AGE GROUP				
SAMPLE							
PERIOD	DATE		31	41	51	61	TOTAL
MALES							
1	6/ 4-	COUNT	6,099	48,394	30,493	1,771	86,757
	9/ 8	PERCENT	7.03	55.78	35.15	2.04	100.00
FEMALES							
1	6/ 4-	COUNT	5,902	82,232	44,067	984	133,185
	9/ 8	PERCENT	4.43	61.74	33.09	.74	100.00
SEXES COMBINED							
1	6/ 4-	COUNT	12,001	130,626	74,560	2,755	219,942
	9/ 8	PERCENT	5.46	59.39	33.90	1.25	100.00

Table 92. Togiak District commercial catch of chum salmon by age group and sex with length (mm) and weight (kg), 1979.

	AGE GROUP				
	31	41	51	61	TOTAL
MALES					
NUMBER	6,099	48,394	30,493	1,771	86,757
AV LENGTH	548.39	596.84	629.06	620.89	605.25
STD ERROR	6.26	2.13	2.96	12.22	1.66
SAMP SIZE	31	246	155	9	441
AV WEIGHT	3.49	4.32	4.82	5.21	4.46
STD ERROR	.23	.11	.19		.09
SAMP SIZE	7	48	25	1	81
FEMALES					
NUMBER	5,902	82,232	44,067	984	133,185
AV LENGTH	528.40	568.33	593.08	597.20	574.96
STD ERROR	5.23	1.17	1.56	11.38	.92
SAMP SIZE	30	418	224	5	677
AV WEIGHT	2.74	3.29	3.65		3.39
STD ERROR	.09	.04	.06		.04
SAMP SIZE	4	94	42	0	140
SEXES COMBINED					
NUMBER	12,001	130,626	74,560	2,755	219,942
AV LENGTH	538.56	578.89	607.79	612.43	586.91
STD ERROR	4.09	1.08	1.52	8.84	.86
SAMP SIZE	61	664	379	14	1,118
AV WEIGHT	3.12	3.67	4.13	5.21	3.81
STD ERROR	.15	.05	.08		.04
SAMP SIZE	11	142	67	1	221

Table 93. Togiak River daily sockeye salmon escapement counts, 1979.

DATE	DAILY COUNT	ACCUMULATIVE COUNT	DAILY PERCENT OF TOTAL	ACCUMULATIVE PERCENT
JUNE 28	66	66	0.04	0.04
29	708	774	0.41	0.45
30	498	1,272	0.29	0.74
JULY 1	2,484	3,756	1.45	2.19
2	804	4,560	0.47	2.66
3	2,904	7,464	1.70	4.36
4	2,700	10,164	1.58	5.94
5	6,942	17,106	4.06	10.00
6	5,952	23,058	3.48	13.48
7	2,454	25,512	1.43	14.91
8	3,522	29,034	2.06	16.97
9	3,576	32,610	2.09	19.06
10	5,688	38,298	3.32	22.38
11	9,312	47,610	5.44	27.82
12	11,556	59,166	6.75	34.57
13	6,624	65,790	3.87	38.44
14	4,242	70,032	2.48	40.92
15	3,852	73,884	2.25	43.17
16	3,330	77,214	1.95	45.12
17	9,000	86,214	5.26	50.38
18	11,376	97,590	6.65	57.03
19	13,350	110,940	7.80	64.83
20	9,294	120,234	5.43	70.26
21	4,860	125,094	2.84	73.10
22	3,978	129,072	2.32	75.42
23	2,796	131,868	1.63	77.05
24	2,088	133,956	1.22	78.27
25	2,706	136,662	1.58	79.85
26	4,566	141,228	2.67	82.52
27	5,658	146,886	3.31	85.83
28	5,322	152,208	3.11	88.94
29	3,720	155,928	2.17	91.11
30	3,072	159,000	1.80	92.91
31	3,870	162,870	2.26	95.17
AUG. 1	3,168	166,038	1.85	97.02
2	4,416	170,454	2.58	99.60
3	684	171,138	0.40	100.00

Table 94. Togiak River escapement of sockeye salmon by sex and sample period, 1979.

PERIOD NUMBER	DATE	NO. OF FISH SAMPLED	COUNT		PERCENT		ESCAPEMENT	NUMBER IN ESCAPEMENT	
			MALES	FEMALES	MALES	FEMALES		MALES	FEMALES
1	06/28-07/14	475	265	210	55.79	44.21	70,032	39,070	30,962
2	07/15-08/03	417	239	178	57.31	42.69	101,106	57,948	43,158
TOTAL		892	504	388	56.69	43.31	171,138	97,018	74,120

Table 95. Togiak River escapement of sockeye salmon by age group, sex, and sample period, 1979.

			AGE GROUP					
SAMPLE PERIOD	DATE		42	52	53	62	63	TOTAL
MALES								
1	06/28-07/14	COUNT	13,564	24,474	737	148	147	39,070
		PERCENT	34.72	62.64	1.89	.38	.38	40.27
2	07/15-08/03	COUNT	20,852	35,642	727	--	727	57,948
		PERCENT	35.98	61.51	1.26	--	1.26	59.73
COLUMN TOTALS		COUNT	34,416	60,116	1,464	148	874	97,018
		PERCENT	35.48	61.96	1.51	.15	.90	100.00
FEMALES								
1	06/28-07/14	COUNT	10,468	19,314	295	--	885	30,962
		PERCENT	33.81	62.38	.95	--	2.86	41.77
2	07/15-08/03	COUNT	17,700	22,549	727	--	2,182	43,158
		PERCENT	41.01	52.25	1.69	--	5.06	58.23
COLUMN TOTALS		COUNT	28,168	41,863	1,022	--	3,067	74,120
		PERCENT	38.00	56.48	1.38	--	4.14	100.00
SEXES COMBINED								
1	06/28-07/14	COUNT	24,032	43,788	1,032	148	1,032	70,032
		PERCENT	34.32	62.53	1.47	.21	1.47	40.92
2	07/15-08/03	COUNT	38,552	58,191	1,454	--	2,909	101,106
		PERCENT	38.13	57.55	1.44	--	2.88	59.08
COLUMN TOTALS		COUNT	62,584	101,979	2,486	148	3,941	171,138
		PERCENT	36.57	59.59	1.45	.09	2.30	100.00

Table 96. Togiak River escapement of sockeye salmon by age group and sex with length (mm), 1979.

	AGE GROUP					
	42	52	53	62	63	TOTAL
MALES						
NUMBER	34,416	60,116	1,464	148	874	97,018
AV LENGTH	546.35	612.72	556.16	610.00	617.95	588.36
STD ERROR	1.41	1.68	8.35		5.50	1.17
SAMP SIZE	178	313	8	1	4	504
FEMALES						
NUMBER	28,168	41,863	1,022	0	3,067	74,120
AV LENGTH	514.09	576.35	540.82		580.63	552.38
STD ERROR	1.90	1.64	16.77		6.84	1.23
SAMP SIZE	144	224	5	0	15	388
SEXES COMBINED						
NUMBER	62,584	101,979	2,486	148	3,941	171,138
AV LENGTH	531.83	597.79	549.86	610.00	588.90	572.78
STD ERROR	1.16	1.20	8.25		5.53	.85
SAMP SIZE	322	537	13	1	19	892

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